TOSHIBA

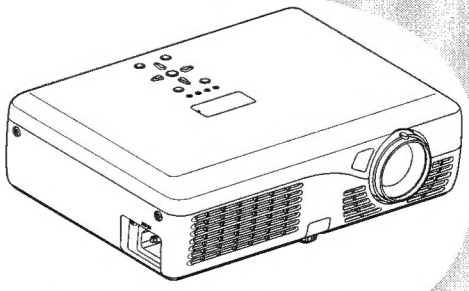
FILE NO. 330-200301

VIDE-V30269

SERVICE MANUAL

3LCD DATA PROJECTOR

TLP-T50M
TLP-T50
TLP-S30

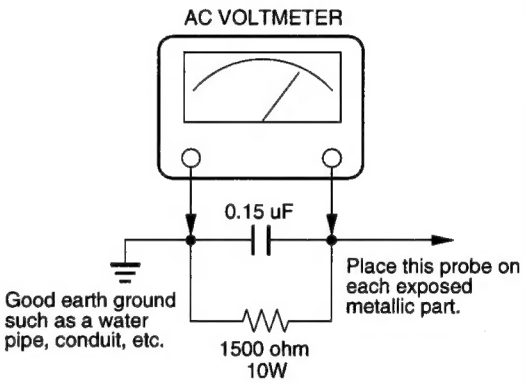


TLP-T50/TLP-T50M/TLP-S30

SAFETY PRECAUTION

WARNING: Service should not be attempted by anyone unfamiliar with the necessary precautions on this projector. The following are the necessary precautions to be observed before servicing this chassis.

1. An isolation Transformer should be connected in the power line between the projector and the AC line before any service is performed on the projector.
2. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as; non-metallic control knobs, insulating covers, shields, isolation resistor-capacitor network etc.
3. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as terminals, screwheads, metal overlays, control shafts etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into an AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5000 ohm per volt or more sensitivity in the following manner: Connect a1500 ohm 10W resistor, in parallel with a 0.15 uF, AC type capacitor, between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 ohm resistor and 0.15 uF capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 5.25V(rms). This corresponds to 3.5 mA(AC). Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc.
Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list.
Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

ULTRAVIOLET DANGER IN SERVICE MODE

Eye damage may result from directly viewing the light produced by the lamp used in this product. Always turn off lamp before opening this cover. Ultraviolet radiation eye protection required during servicing.

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SAFETY PRECAUTIONS

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. DANGEROUS HIGH VOLTAGES ARE PRESENT INSIDE THE ENCLOSURE. DO NOT OPEN THE CABINET. REFER SERVICING TO QUALIFIED PERSONNEL ONLY.

FCC Radio Frequency Interference Statement

Note:
USA only
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiates radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING:
USA only
Changes or modifications made to this equipment, not expressly approved by Toshiba, or parties authorized by Toshiba, could void the user's authority to operate the equipment.

Notice:
CANADA only
This Class A digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

WARNING: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

IMPORTANT SAFETY INSTRUCTIONS

CAUTION: PLEASE READ AND OBSERVE ALL WARNINGS AND INSTRUCTIONS GIVEN IN THIS OWNER'S MANUAL AND THOSE MARKED ON THE UNIT. RETAIN THIS BOOKLET FOR FUTURE REFERENCE.

This set has been designed and manufactured to assure personal safety. Improper use can result in electric shock or fire hazard. The safeguards incorporated in this unit will protect you if you observe the following procedures for installation, use and servicing. This unit is fully transistorized and does not contain any parts that can be repaired by the user.

DO NOT REMOVE THE CABINET COVER, OR YOU MAY BE EXPOSED TO DANGEROUS VOLTAGE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL ONLY.

1. Read Owner's Manual

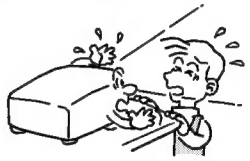
After unpacking this product, read the owner's manual carefully, and follow all the operating and other instructions.

2. Power Sources

This product should be operated only from the type of power source indicated on the marking label.
If you are not sure of the type of power supply to your home, consult your product dealer or local power company.
For products intended to operate from battery power, or other sources, refer to the operating instructions.

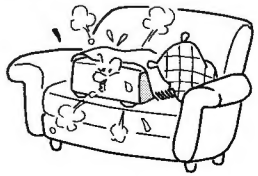
3. Source of Light

Do not look into the lens while the lamp is on. The strong light from the lamp may cause damage to your eyes or sight.



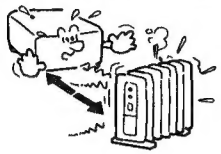
4. Ventilation

Openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.



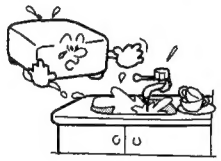
5. Heat

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.



6. Water and Moisture

Do not use this product near water. - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool and the like.



7. Cleaning

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a soft cloth for cleaning.

8. Power-Cord Protection

Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

9. Overloading

Do not overload wall outlets; extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

10. Lightning storms

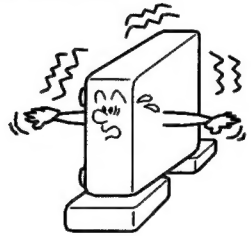
For added protection for this product during storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the product due to lightning and power-line surges.

11. Object and Liquid Entry

Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

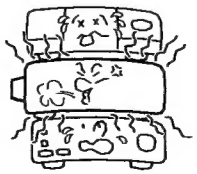
12. Do not place the product vertically

Do not use the product in the upright position to project the pictures at the ceiling, or any other vertical positions. It may fall down and dangerous.



13. Stack Inhibited

Do not stack other equipment on this product or do not place this product on the other equipment. Top and bottom plates of this product develops heat and may give some undesirable damage to other unit.



14. Attachments

Do not use attachments not recommended by the product manufacturer as they may cause hazards.

15. Accessories

Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

16. Damage Requiring Service

Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

a) When the power-supply cord or plug is damaged.
b) If liquid has been spilled, or objects have fallen into the product.
c) If the product has been exposed to rain or water.
d) If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
e) If the product has been dropped or damaged in any way.
f) When the product exhibits a distinct change in performance - this indicates a need for service.

17. If glass components, including lens and lamp, should break, contact your dealer for repair service.

This product incorporates glass components, including a lens and a lamp. If such parts should break, please handle with care to avoid injury and contact your dealer for repair service. The broken pieces of glass may cause to injury. In the unlikely event of the lamp rupturing, thoroughly clean the area around the projector and discard any edible items placed in that area.

18. Servicing

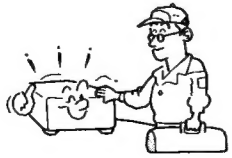
Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

19. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
(Replacement of the lamp only should be made by users.)

20. Safety Check

Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

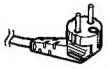
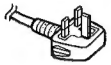


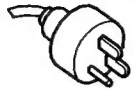
21. Do not leave thermal-paper documents or easily deformed items on top of the unit or near the air exhaust.

The heat from the unit could erase the information on the thermal paper, or cause deformation or warping.
Also, when you touch a metal object put near the air exhaust, a burn may be caused.

POWER SUPPLY CORD SELECTION

If your line voltage is 220 to 240V, use one of the following types of cable.

Plug configuration	Plug type	Line voltage
	EURO	220 – 240V
	UK	220 – 240V
Use a 5A fuse which is approved by ASTA or BSI to BSI362. Always replace the fuse cover after changing the fuse.		

Plug configuration	Plug type	Line voltage
	Australian 240V 10A	200 – 240V
	Switzerland 240V 6A	200 – 240V
	North American 240V 15A	200 – 240V

IMPORTANT PRECAUTIONS

Save Original Packing Materials

The original shipping carton and packing materials will come in handy if you ever have to ship your LCD projector. For maximum protection, repack the set as it was originally packed at the factory.

Moisture Condensation

Never operate this unit immediately after moving it from a cold location to a warm location. When the unit is exposed to such a change in temperature, moisture may condense on the crucial internal parts. To prevent the unit from possible damage, do not use the unit for at least 2 hours when there is an extreme or sudden change in temperature.

Place and Manner of Installation

- Do not place in hot locations, such as near heating equipment. Doing so could cause malfunction, and shorten the life of the LCD panel.
- Avoid locations with oil or cigarette smoke. Doing so will dirty the LCD panel and other optical parts, shortening their lives, and darkening the screen.
- Do not use in angle of 20° or more degrees. Doing so could shorten the life of the lamp.
- If used at high altitudes, the unit could cease operation even if used within the rated temperature range. This is because the thinner air at high altitudes decreases the internal cooling efficiency. Therefore, please lower the ambient temperature if using at high altitudes.

IMPORTANT PRECAUTIONS (Continued)

Avoid Volatile Liquid

Do not use volatile liquids, such as an insect spray, near the unit. Do not leave rubber or plastic products touching the unit for a long time. They will leave marks on the finish.
If cleaning with a chemically saturated cloth, be sure to follow the product's precautions.

LCD Panel

The life of the LCD panel is limited. Take care over the points below so as to use the panel for years.

- To prolong the life of this panel, never fail to turn the power off when the panel is not in use and make sure that the lamp has gone out. The state of the lamp being extinguished helps enhance the effect of energy saving.
- If the air filter is stained and is clogged up, the main unit inner temperature rises. As a result, the life of the LCD is shortened and a malfunction may also occur.
  Clean the air filter from time to time and replace it regularly. It is recommended that this replacement be done at the time of replacing a lamp. (Ask a dealer where the unit was purchased or your nearby service station about an air filter for replacement.)

In the spaces provided below, record the Model and Serial No. located at the bottom of your LCD projector.

Model No. Serial No.

Retain this information for future reference.

EXEMPTION CLAUSES

- Toshiba Corporation bears no responsibility in the case of damages arising from natural disaster such as earthquakes, lightning, etc., fire not liable to Toshiba Corporation, operating by third parties, other accidents, or use under abnormal conditions including erroneous or improper operation and other problems.
- Toshiba Corporation bears no responsibility for incidental damages (lost profit, work interruption, corruption or loss of the memory contents, etc.) arising from the use of or the inability to use this unit.
- Toshiba Corporation accepts no liability whatsoever for any damages arising from not having followed the descriptions in this Instruction Manual.
- Toshiba Corporation accepts no liability whatsoever for any damages arising from malfunctions arising from combination with equipment or software that is not related to Toshiba Corporation.

OTHER CAUTIONS AND INFORMATIONS

Copyrights

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Disposal

This product contains substances which are harmful to humans and the environment.

- The solder used in the PCB manufacturing process contains lead.
- The lamp contains inorganic mercury.

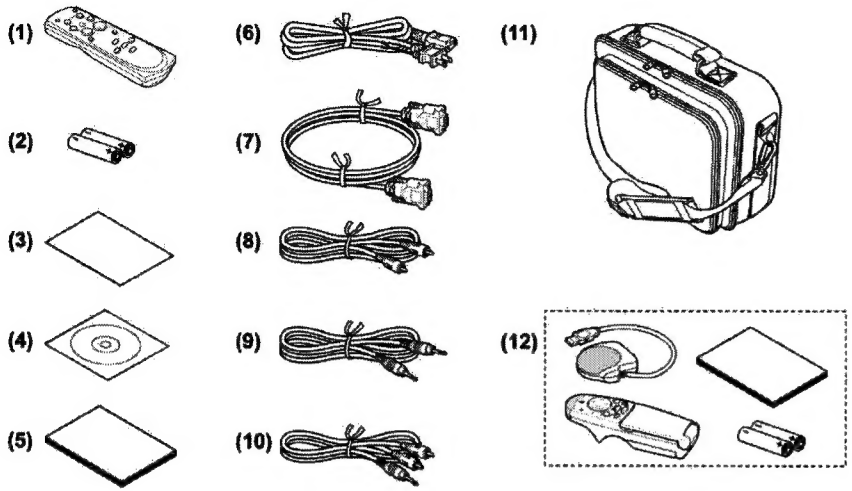
Please dispose of this product or used lamps in accordance with local regulations.

Trademarks

- VGA, SVGA, XGA, SXGA, UXGA are trademarks or registered trademarks of International Business Machines Corporation.
- Macintosh is a registered trademark of Apple Computer, Inc.
- Windows is a registered trademark of Microsoft Corporation in the U.S. and other countries.

Checking the package contents

Please make sure that the following items are included in the box, along with the main unit. If an item is missing, please contact the store from which you purchased the product immediately.

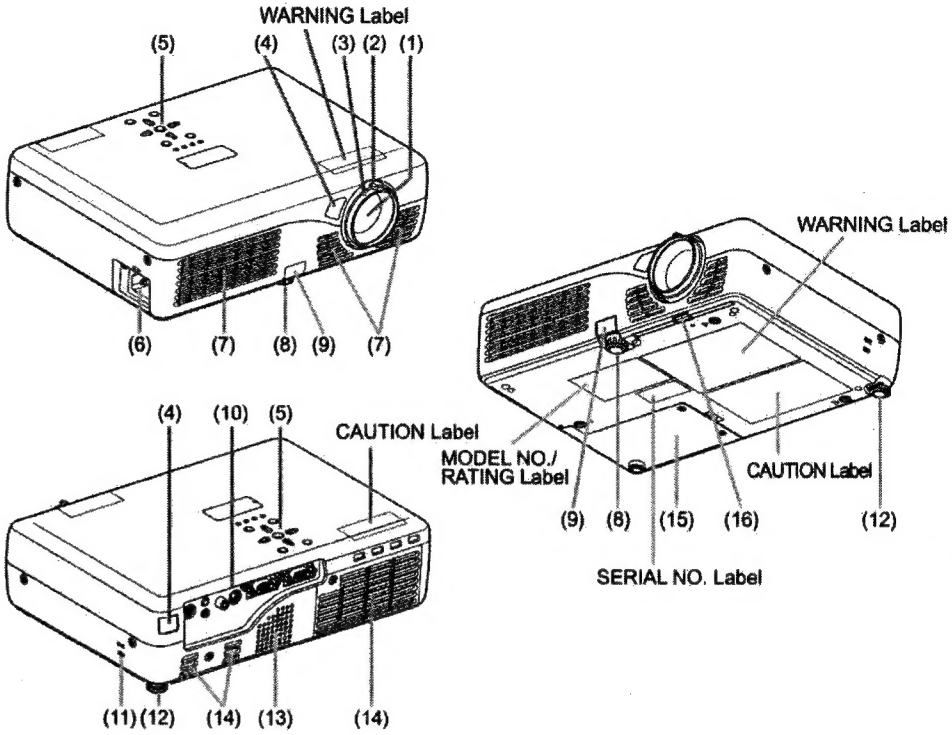


- ☐ (1) Remote control
- ☐ (2) R03 (SIZE AAA) batteries for remote control (2)
- ☐ (3) Quick Reference
- ☐ (4) CD-ROM
- ☐ (5) Owner's Manual
- ☐ (6) Power cord (See note)
- ☐ (7) RGB cable
- ☐ (8) Video cable
- ☐ (9) Audio cable (for computer)
- ☐ (10) Audio cable
- ☐ (11) Carrying bag
- ☐ (12) Mouse remote control set (*)
  - • Mouse remote control, batteries
  - • Mouse remote control receiver
  - • Mouse remote control manual

(*) Supplied with TLP-T50M

Note
The shape and number of power cords supplied vary depending on the product destination.

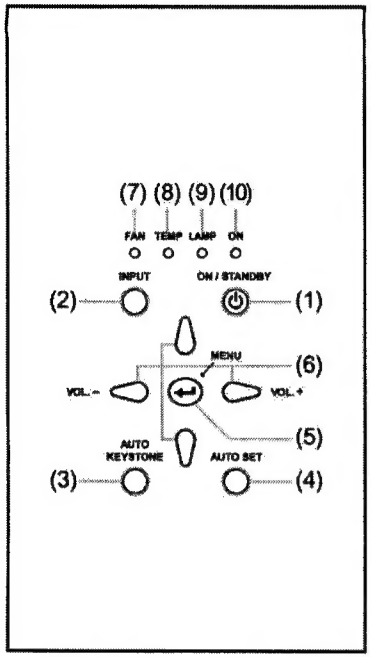
Names of each part on the main unit



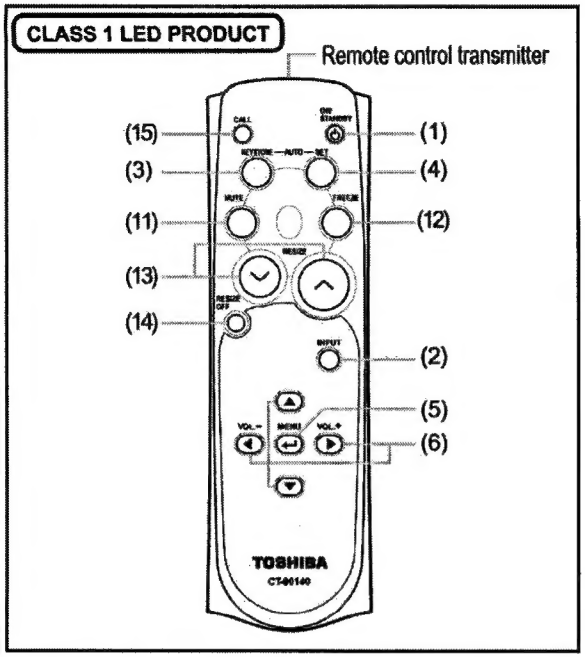
Name	: Function
(1) Lens	: Projects expanded image
(2) Zooming lever	: Adjusts screen size
(3) Focusing ring	: Adjusts screen focus
(4) Infrared remote sensor	: Senses commands from the remote control
(5) Control panel	: Operates the projector
(6) AC IN socket	: Connect the supplied power cord here
(7) Air intake	: Draws in air from outside unit
(8) Foot adjuster	: Adjusts the vertical projection angle
(9) Foot adjuster release button	: Press to stow the foot adjuster
(10) Connection terminal	: Connect to an external device
(11) Anti-theft lock hole	: Attach a security chain, etc. here
(12) Tilt adjuster	: Adjusts the projector's horizontal tilt
(13) Speaker	: Plays audio
(14) Air exhaust	: Expels air that has grown hot inside the projector
(15) Lamp cover	: Remove to replace lamp
(16) Air filter catch	: Take this to pull out the filter for cleaning

Names of each part on the control panel and remote control

Control panel



Remote Control

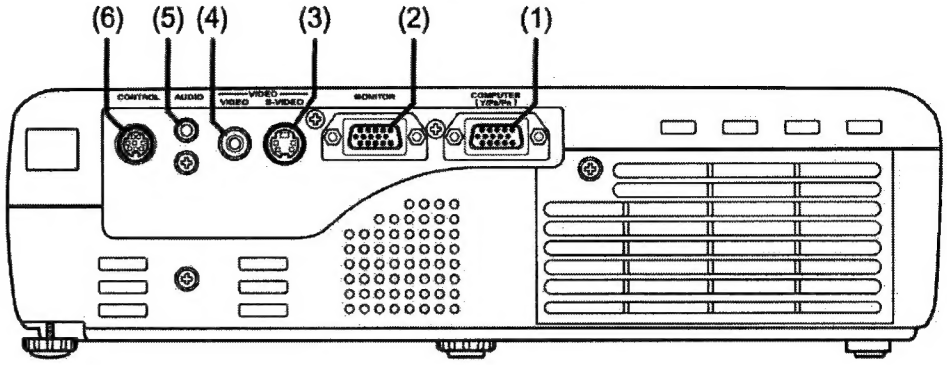


Name	: Main Function
(1) ON/STANDBY button	: Turns the power on/off (standby)
(2) INPUT button	: Selects input
(3) AUTO KEYSTONE button	: Adjusts keystone (trapezoidal distortion)
(4) AUTO SET button	: Sets up image and mode
(5) MENU button	: Displays menus and makes selections
(6) Selection button	: Menu selections and adjustments, etc.
(7) FAN indicator	: Displays cooling fan mode
(8) TEMP indicator	: Lights when internal temperature too high
(9) LAMP indicator	: Displays lamp mode
(10) ON indicator	: Displays whether power is on or off
(11) MUTE button	: Cuts off the picture and sound temporarily
(12) FREEZE button	: Pauses image
(13) RESIZE button	: Enlarges picture size
(14) OFF button	: Turns off enlarged picture display
(15) CALL button	: Displays the information on the screen

Notes

- For the remainder of this manual, buttons are referred to as follows:
  Selection button ⇒ ▲▼◀▶; MENU button ⇒ ↵
- For further information of the mouse remote control supplied with the TLP-T50M, see the Owner's Manual of the Mouse Remote Control.

Names of the connection terminals



(1) COMPUTER terminal
Input RGB signal from a computer or other source, or a component video signal (Y/P_B/P_R) from video equipment.

(2) MONITOR terminal
Connect to a computer display, etc.

(3) S-VIDEO terminal
Input S video signals from video equipment.

(4) VIDEO terminal
Input video signals from video equipment.

(5) AUDIO terminal
Input audio signals from a computer or video equipment.

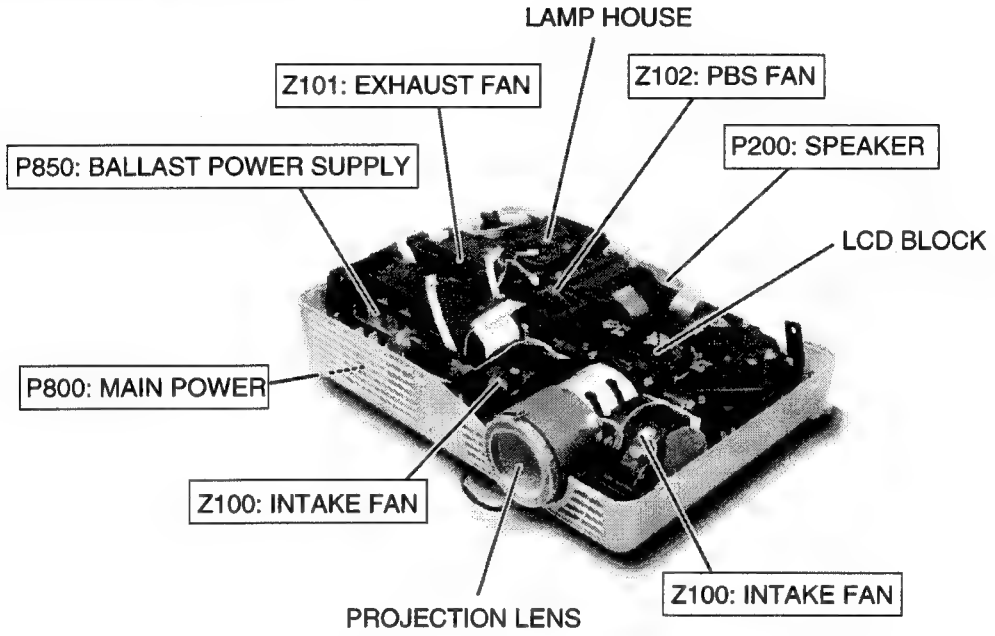
(6) CONTROL terminal
When operating the projector via a computer, connect this to the controlling computer's RS-232C port.

Note

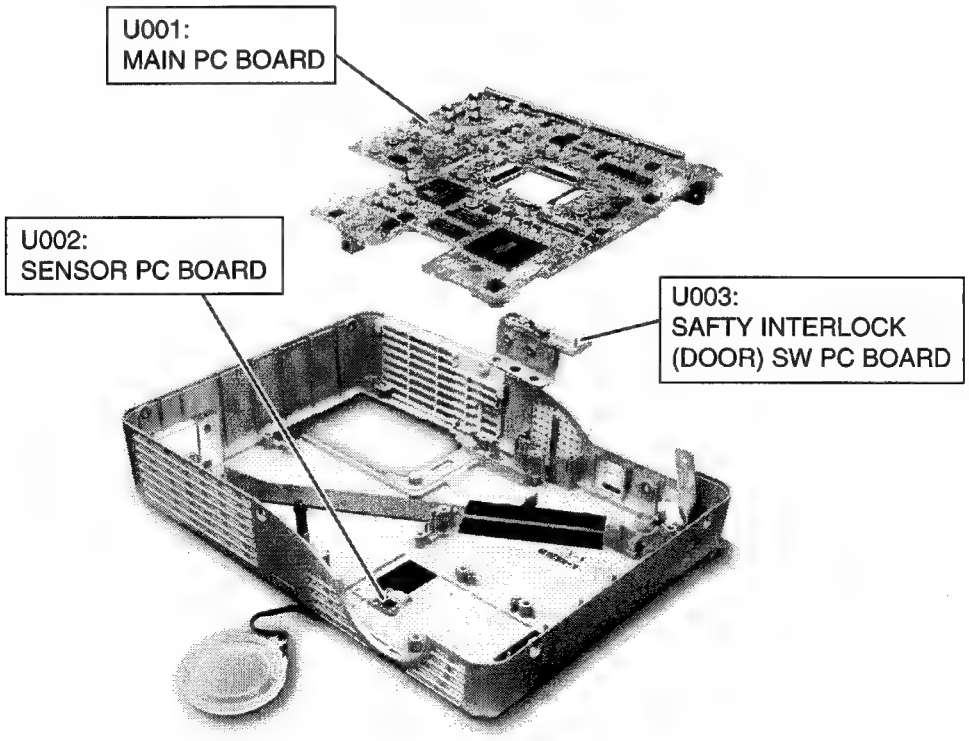
- Although this owner's manual abbreviates component video signals as Y/P_B/P_R, the product also supports signals from video equipment marked "Y/C_B/C_R."

SECTION 1
PART REPLACEMENT AND ADJUSTMENT PROCEDURES

1. LOCATION OF MAIN PARTS



2. LOCATION OF PC BOARD

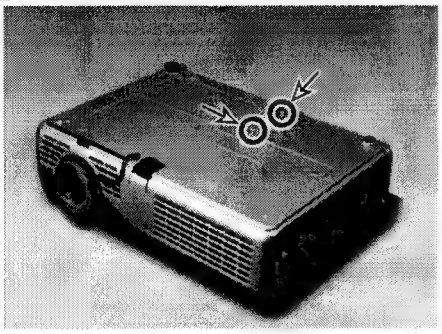
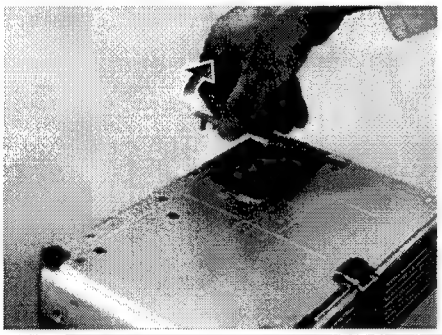
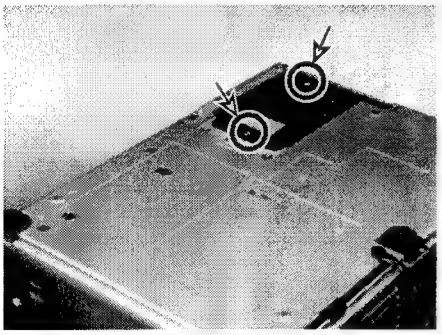
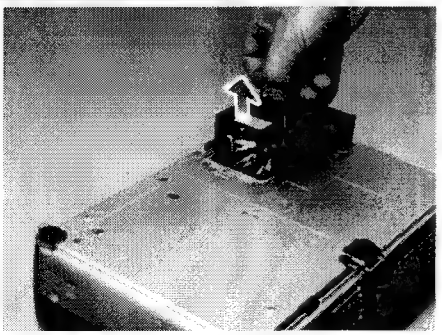


CAUTIONS BEFORE SERVICING

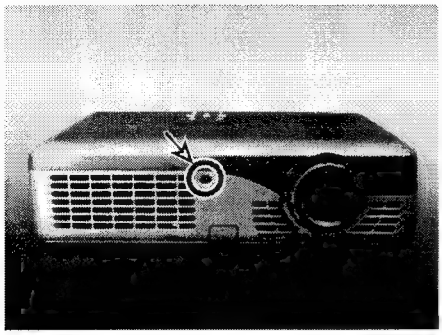
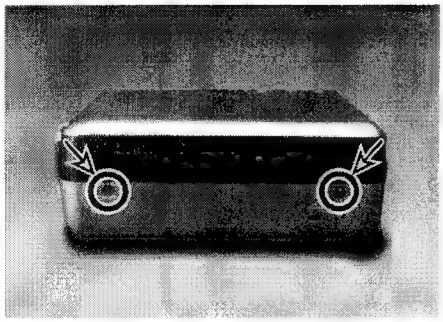
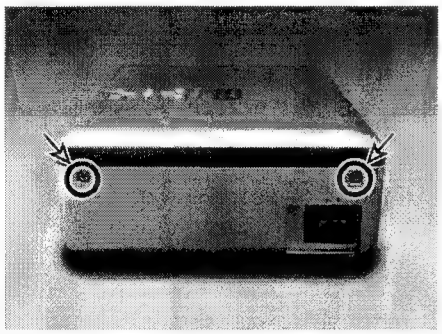
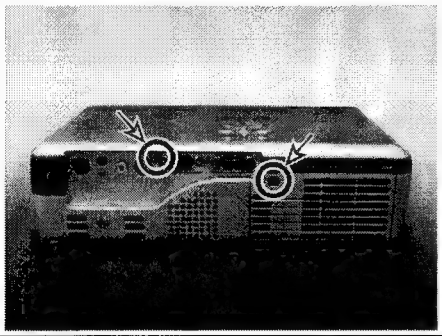
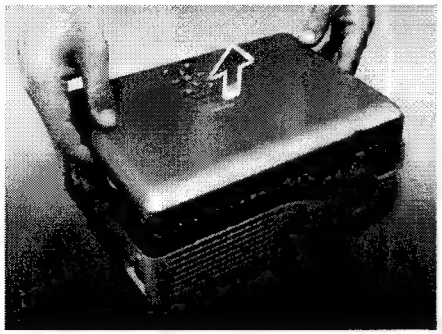
Electronic parts are susceptible to static electricity and may easily be damaged, so do not forget to take proper grounding treatment as required.
Many screws are used inside the unit. To prevent missing, dropping, etc. of the screws, always use a magnetized screwdriver on servicing. Several kinds of screws are used and some of them need special cautions. That is, take care of the tapping screws securing molded parts and fine pitch screws used to secure metal parts. If they are used improperly, the screw holes will be easily damaged and the parts can not be fixed.

3. REPLACEMENT OF MECHANICAL PARTS

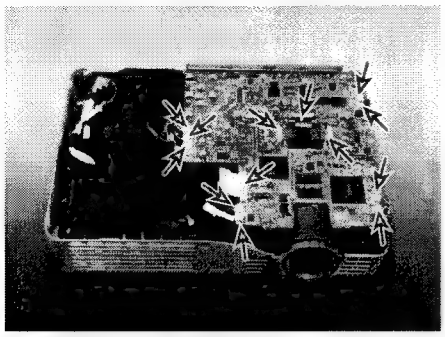
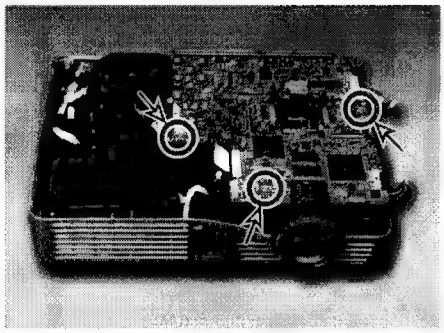
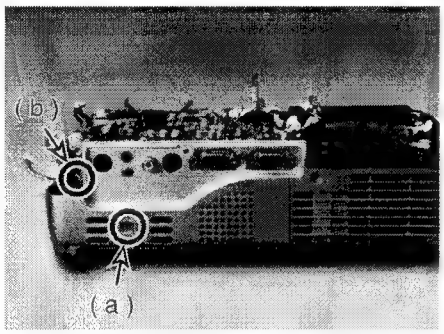
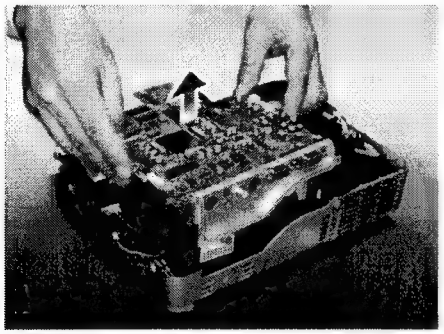
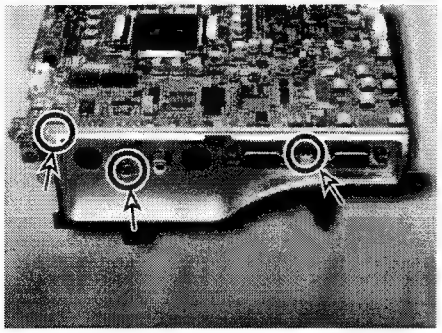
3-1. Lamp Assembly

Step	Figure	Explanation
1		Loosen 2 screws. These screws are retained with split lock washers.
2		Remove lamp cover.
3		Loosen 2 screws that secure the lamp module. These screws are retained with split washers.
4		Lift the lamp module up and slide out from the projector.

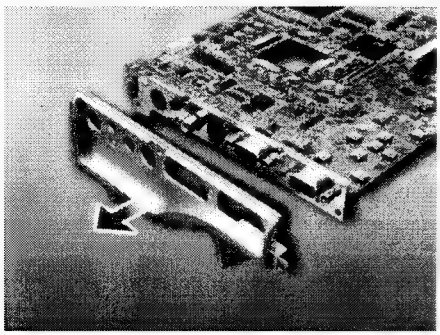
3-2. Top Cover

Step	Figure	Explanation
1		[Front Side] Remove the sheet mask screw (sheet for screw cover). (Pull the notch of the sheet mask screw using tweezers etc, and then removed.) Remove 1 screw (M3 x 6). Screw: type [M-2] 
2		[Right Side] Remove 2 screws (M3 x 6). Screw: type [M-2] 
3		[Left Side] Remove 2 screws (M3 x 6). Screw: type [M-2] 
4		[Rear Side] Remove 2 screws (M3 x 6). Screw: type [M-2] 
5		Top cover can be removed by lifting up.

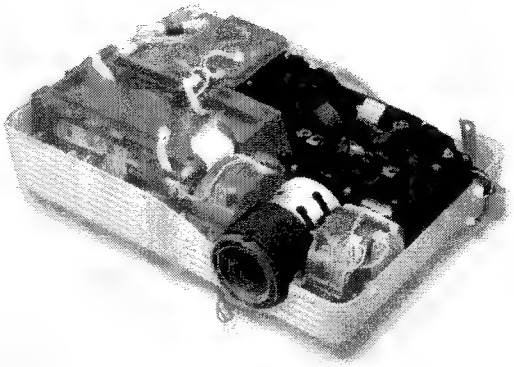
3-3. Main PC Board

Step	Figure	Explanation
1		Disconnect all cables and connectors.
2		Remove 3 screws (M3 x 6). Screw: type [M-2] 
3		(a) Remove 1 screw (M3 x 6) in the rear side. Rear side screw: type [M-2]  (b) Remove 1 ground screw (M3 x 6). Ground screw: type [M-1] 
4		Main PC board can be removed by lifting up.
5		Remove 3 screws (M3 x 6). Screw: type [M-2] 

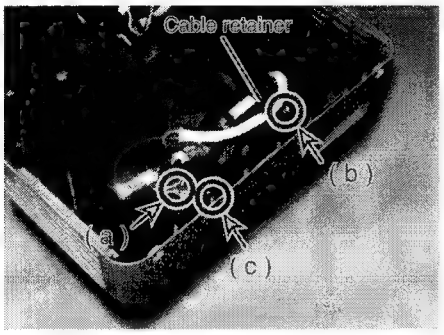
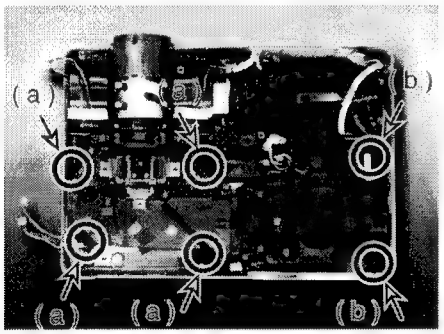
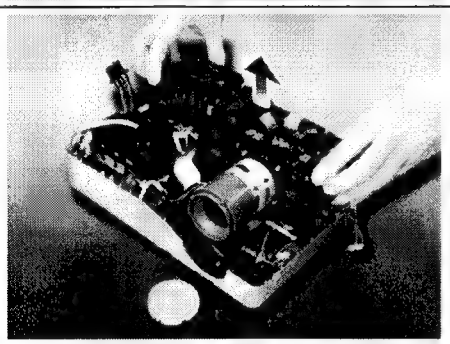
3-3. Main PC Board (Continued)

Step	Figure	Explanation
6		Remove the terminal board cover.

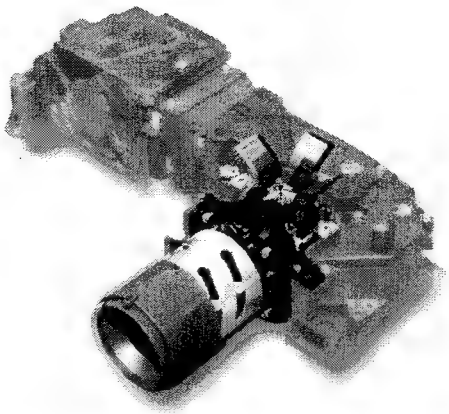
3-4. Optical Engine



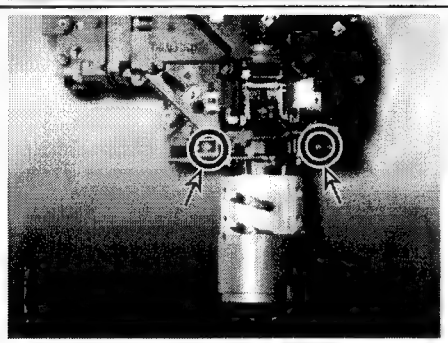
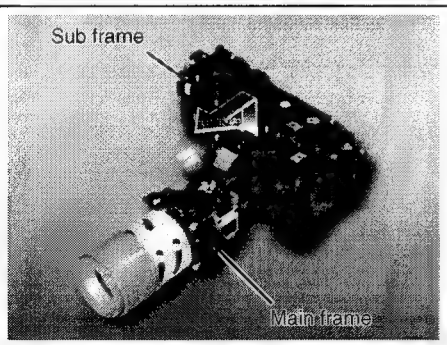
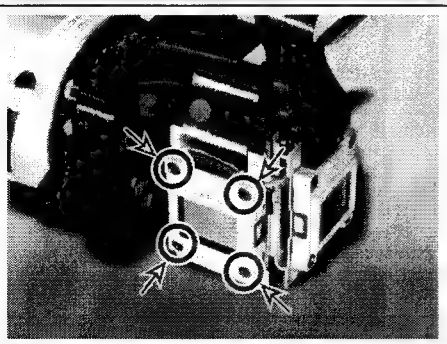
Movie

Step	Figure	Explanation
1		. Remove 1 screw (a) on the lamp housing, and cut the cable retainer. Remove the white cable from the cable retainer. . Remove 1 screw (a) of the cable retainer, and 2 screws (b and c) of lamp housing. . Disconnect the ballast power cable (thick Black) and thermal switch cables (Red and Black) from the lamp housing. Screw: type [M-4] 
2		(a) Remove 4 screws (3 x 12). Screw (a): type [M-5]  (b) Remove 2 screws (3 x 8). Screw (b): type [M-4] 
3		Optical engine can be removed by lifting slowly up.

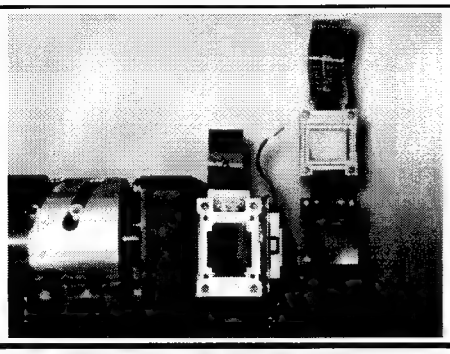
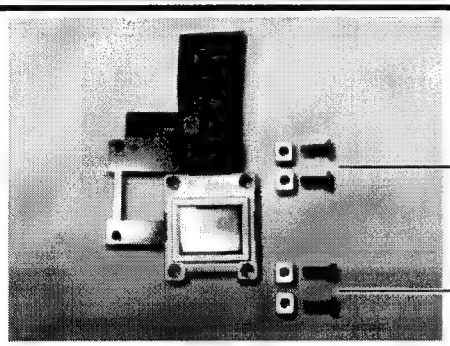
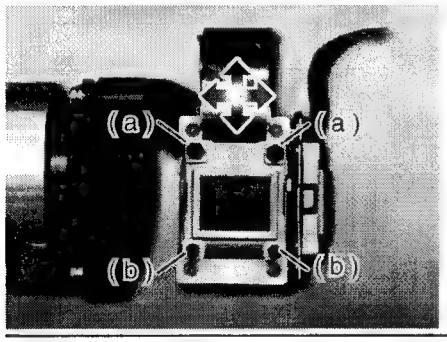
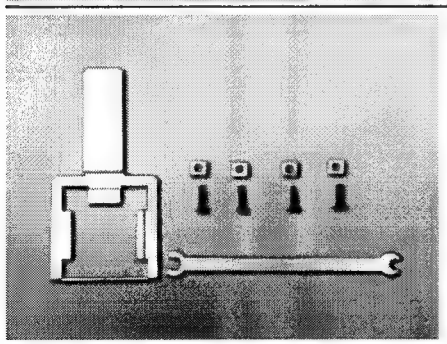
3-5. LCD Panel



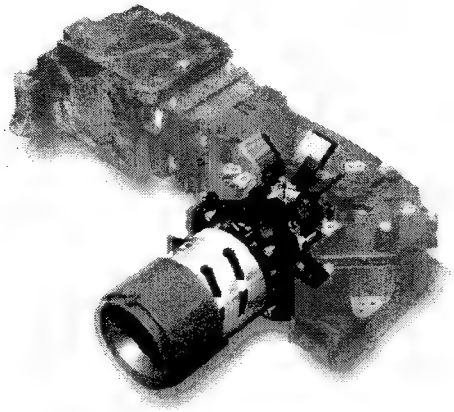
Movie

Step	Figure	Explanation
1		**<Removal>** Remove 1 screw (M3 x 6) on the lamp housing, and remove the lamp housing. Screw: type [M-1] 
2		Remove 2 screws (M2.5 x 8SW). Screw: type [E-1] 
3		Separate the main frame and sub frame from the optical engine block.
4		Remove 4 screws (M2 x 5). Screw: type [E-3] 

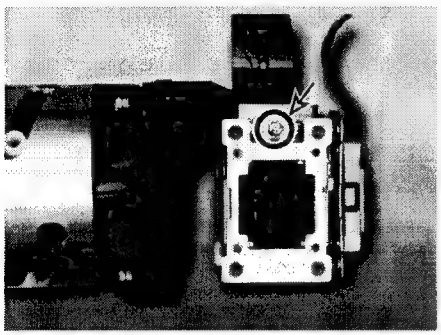
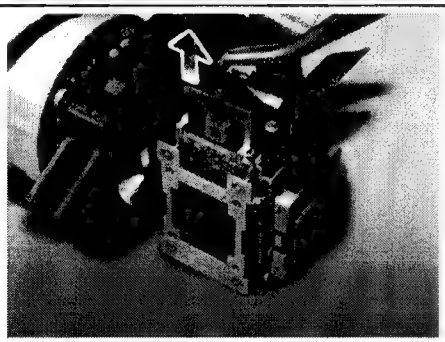
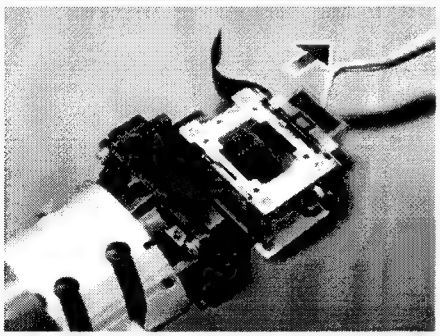
3-5. LCD Panel (Continued)

Step	Figure	Explanation
5		Separate the LCD panel, mask and bracket. [Note] Keep the mask because it is used again. The old LCD panel and 4 screws are not used.
1		**<Installtion>** Prepare a new LCD panel to be replaced. Prepare two pairs of screws and washers ((a) and (b)) for LCD panel installation. Movie
2		Install a new LCD panel and mask using four screws and washers. (a) Side Screw: type [E-4] (b) Side Screw: type [E-5]
		[Note] LCD panel service kit.

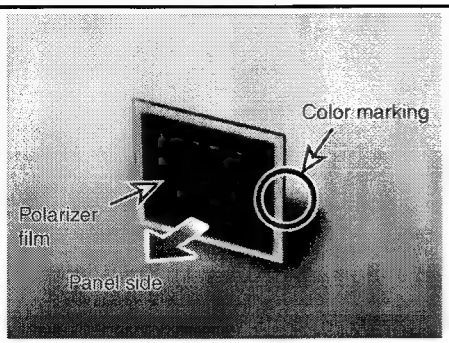
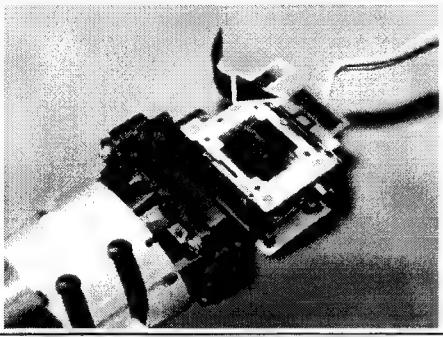
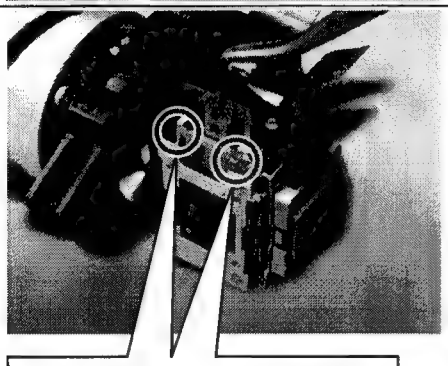
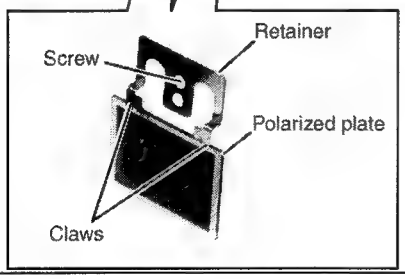
3-6. Polarized Plate on the Main Frame



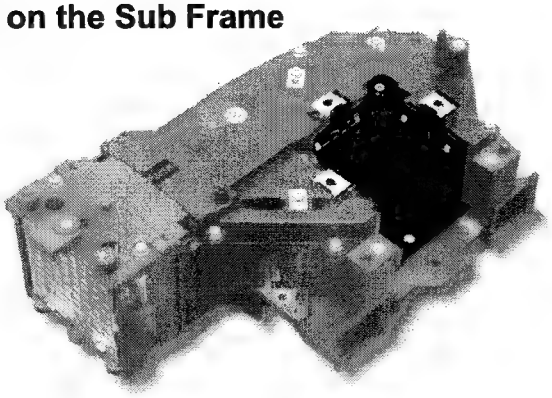
Movie

Step	Figure	Explanation
1		**<Removal>** Remove 1 screw (2 x 2). Screw: type [E-6] 
2		Remove the retainer.
3		Remove the polarized plate.

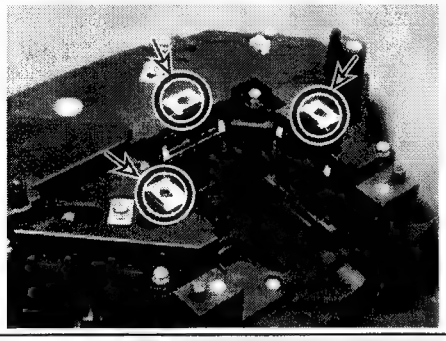
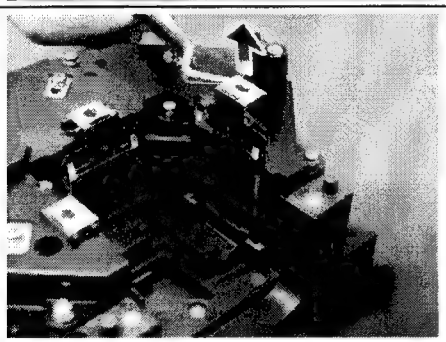
3-6. Polarized Plate on the Main Frame (Continued)

Step	Figure	Explanation
1		**<Installation>** When installing the polarized plate, the film side must face the LCD panel, and the color marking must be the same color as the LCD panel. Movie
2		Install the polarized plate.
3	 	Install the retainer. Fasten the polarized plate with two claws at the tips of the retainer. Fix the retainer with 1 screw. Screw: type [E-6] 

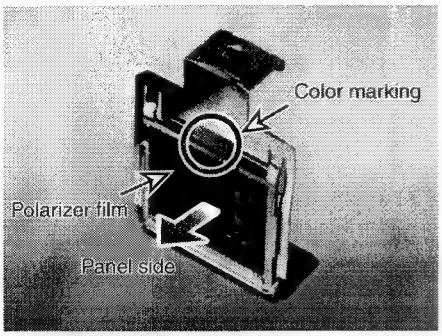
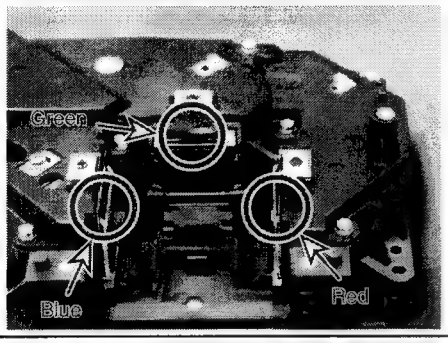
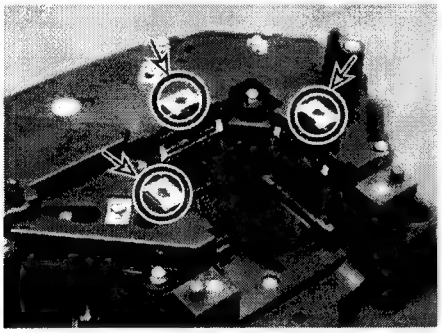
3-7. Polarized Plate on the Sub Frame



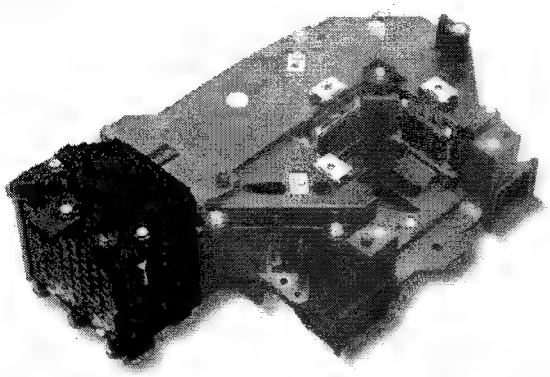
Movie

Step	Figure	Explanation
1		**<Removal>** Remove 1 screw (M2 x 2) each of the polarized plates. Screw: type [E-2] 
2		Remove the polarized plate.

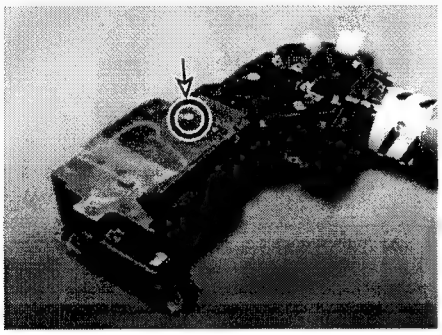
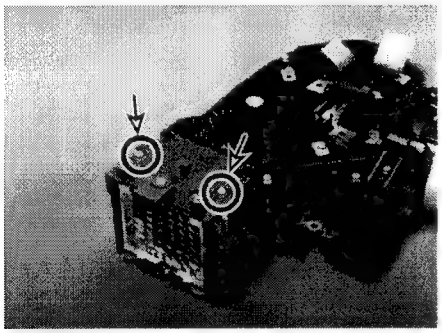
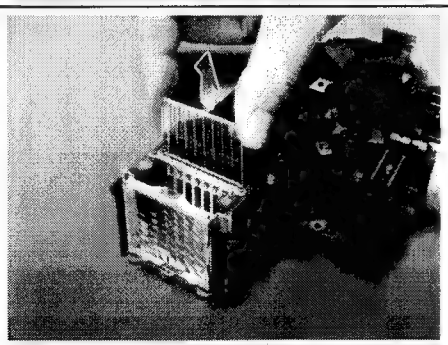
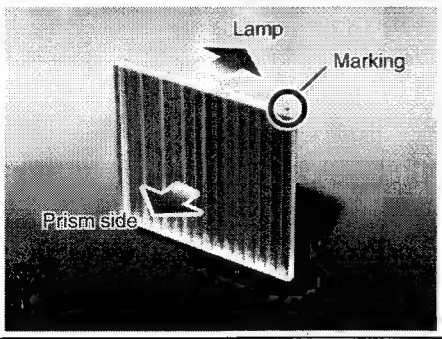
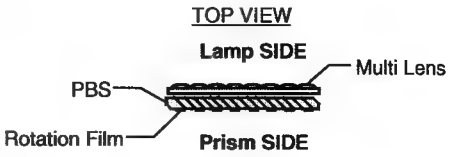
3-7. Polarized Plate on the Sub Frame (Continued)

Step	Figure	Explanation
1		**<Installation>** When installing the polarized plate, the film side must face the LCD panel, and the color marking must be the same color as the LCD panel.
2		When installing the polarized plate to the sub frame, install it in the position corresponding to each color on the sub frame.
3		When installing, projects the black screen, and tighten 3 screws (M2 x 2) in the position where the screen becomes the darkest. Screw: type [E-2] 

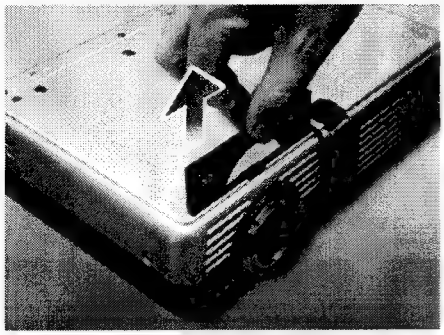
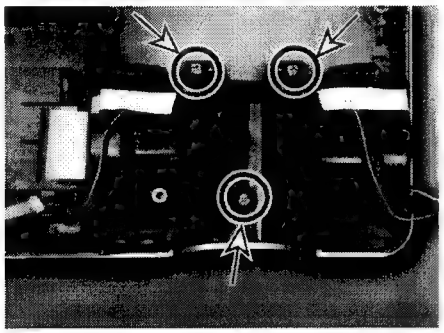
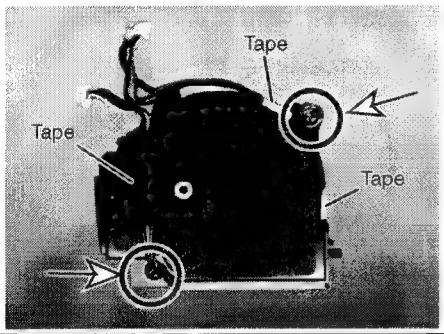
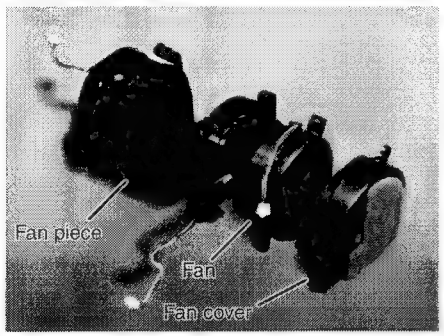
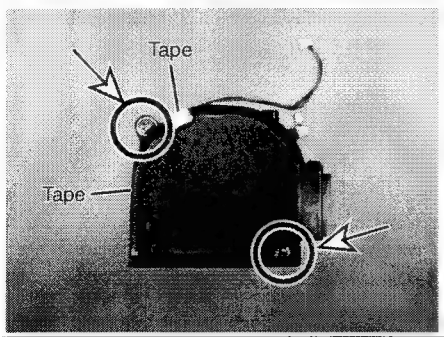
3-8. MULTI-PBS (Polarizing Beam Splitter)



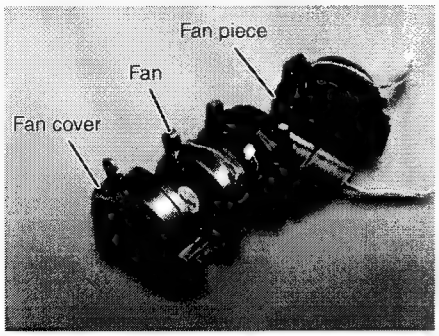
Movie

Step	Figure	Explanation
1		Remove 1 screw (M3 x 6). Screw: type [M-1] 
2		Remove 2 screws (M2.5 x 8SW). Screw: type [E-1] 
3		After pulling out the fitting spring from the gap between Multi-PBS and frame, remove the Multi-PBS.
		[Note] When installing, make sure of the direction of the Multi-PBS (Lamp side and prism side). 

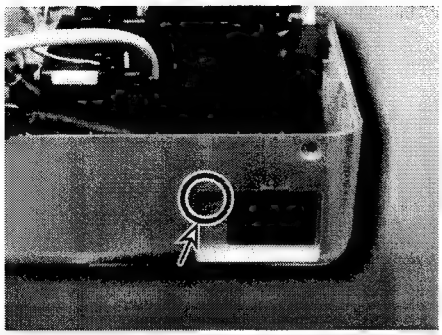
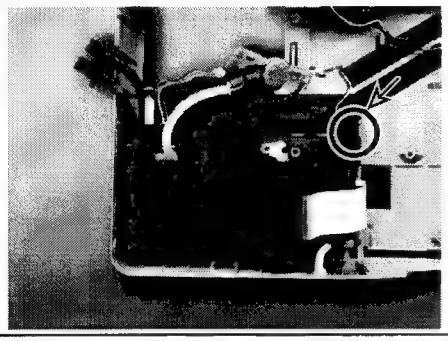
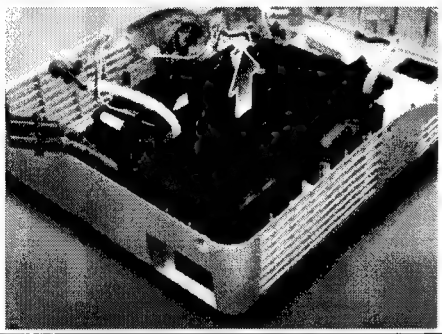
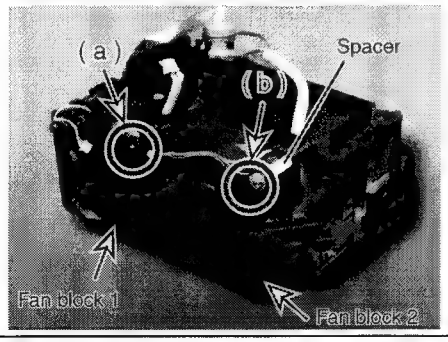
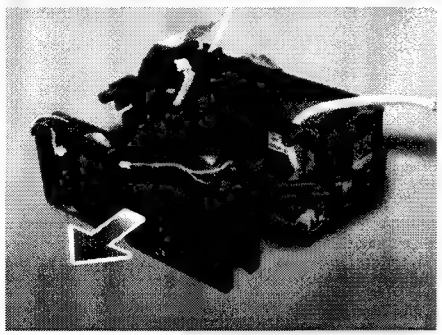
3-9. Intake Fan

Step	Figure	Explanation
1		Remove filter from bottom plate.
2		Remove 3 screws (3 x 8). Screw: type [M-4] 
3		Remove 3 sheets of tape. Remove 2 screws (3 x 14). Screw: type [M-3] 
4		The fan block is separated into 3 pieces as shown.
5		Remove 2 sheets of tape. Remove 2 screws (3 x 14). Screw: type [M-3] 

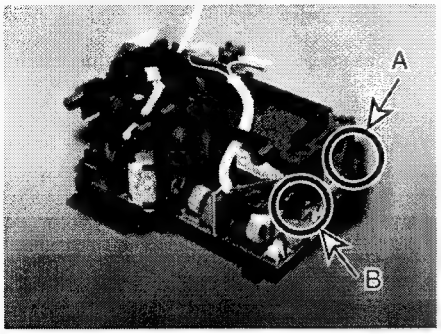
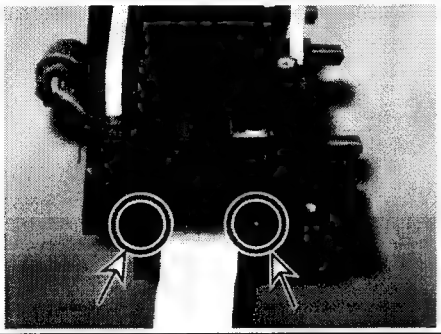
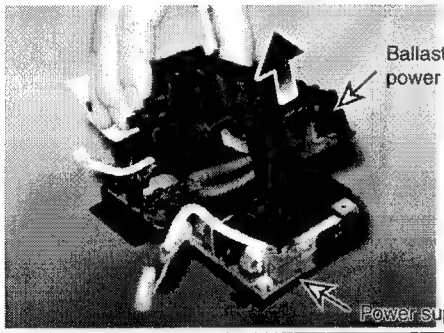
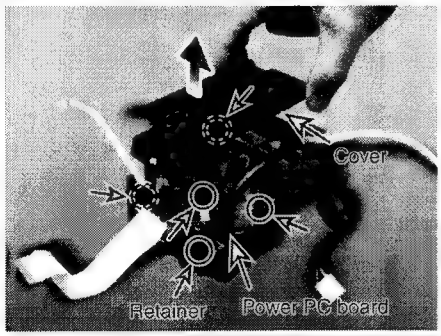
3-9. Intake Fan (Continued)

Step	Figure	Explanation
6		The fan block is separated into 3 pieces as shown.

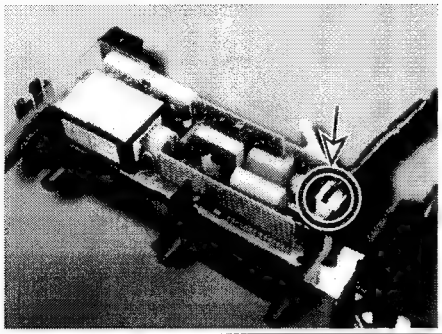
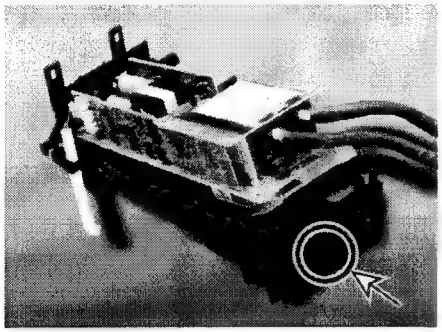
3-10. Power Block

Step	Figure	Explanation
1		Remove 1 screw (M3 x 6). Screw: type [M-1] 
2		Remove 1 screw (3 x 8). Screw: type [M-4] 
3		Remove the power block.
4		Remove 2 screws (a and b) of the fan blocks 1 and 2. Remove 1 spacer (5.5 (diameter) x 16.7 (length)). Screw (a): type [M-6]  Screw (b): type [M-7] 
5		Remove 2 fan blocks.

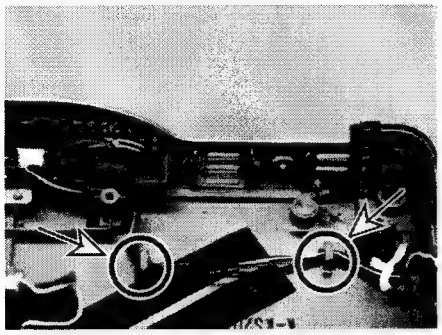
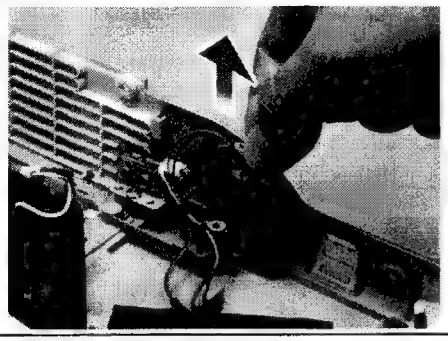
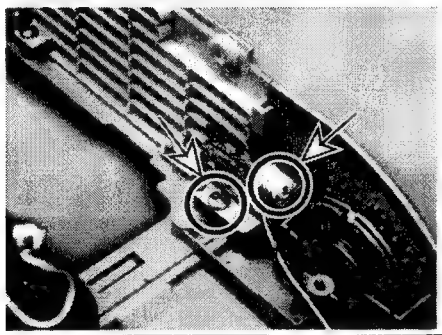
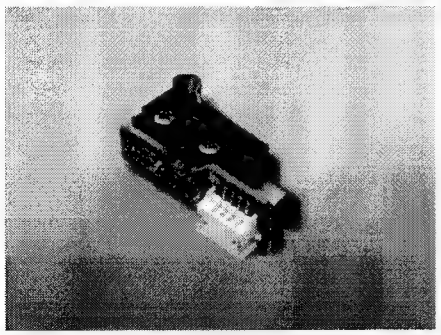
3-10. Power Block (Continued)

Step	Figure	Explanation
6		A. Remove 1 screw (M3 x 6). B. Remove 1 retainer. [Note] . Cut the cable retainer fastening the cable between ballast power supply and power supply block. . Cut the cable retainer fastening the lead wire between ballast power supply and main board.
7		Remove 2 retainers.
8		Lift the ballast power supply up to remove.
9		. Remove cover. . Remove 3 retainers. . Power PC board can be removed.

3-11. Ballast Power Supply

Step	Figure	Explanation
1		Disconnect the cable from the ballast power supply.
2		Remove the ballast power supply by releasing it from retainer.

3-12. Speaker Block

Step	Figure	Explanation
1		Remove harness from 2 hooks on the bottom plate.
2		Pull the speaker up to remove.
3		Disconnect the connector. Remove 1 screw (3 x 8). Screw: type [M-4] 
		Remove safety interlock switch PC board.

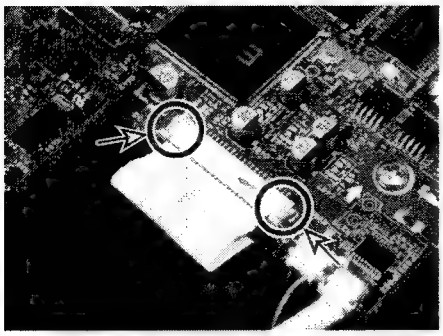
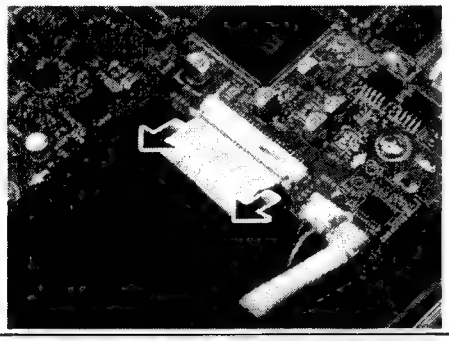
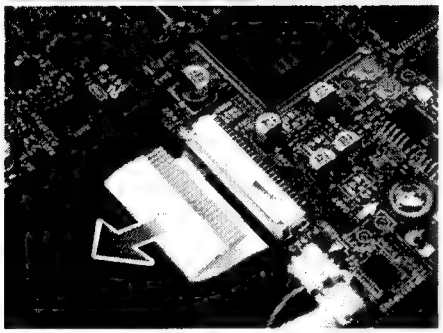
3-13. Screws for Mechanical Parts

Type	Form	Size	Location
M-1		M3 x 6	Main Board (4), Lamp Power Block (1) Power Block (1), Lamp Housing (1)
M-2		M3 x 6	Top Cover (7), Main PCB (3), Back terminal board (3)
M-3		3 x 14	Intake Fan (4)
M-4		3 x 8	Intake Fan (3), Safety Inter Lock Switch Board (1), Power Block (1), Lamp Housing (5)
M-5		3 x 12	Optical Engine (4)
M-6		3 x 25	Power Block Fan (a), (1)
M-7		3 x 35	Power Block Fan (b), (1)

3-14. Screws for Optical Engine

Type	Form	Size	Location
E-1		M2.5 x 8SW	Main Frame (2), Retaining Lid of MULTI-PBS (2)
E-2		2 x 2	Sub Frame (3)
E-3		M2 x 5	LCD Panel (12)
E-4		M2.5 x 6.5	LCD Panel (2) Contained in Service kit
E-5		M2.5 x 6.5	LCD Panel (2) Contained in Service kit
E-6		2 x 2	Prism Block (3)

3-15. How to Disconnect FFC/FPC Connector

Step	Figure	Explanation
1		Location number: Main PCB: PJ402
2		Release 2 retaining tabs. [Note] Retaining tabs stop when released. Do not use excessive force to release tabs.
3		FFC/FPC cable can be disconnected.

4. OPTICAL ADJUSTMENT

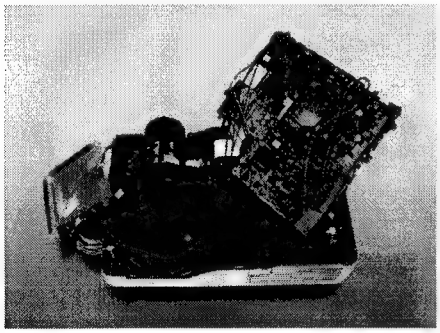
4-1. Preparation

<Test Equipments and Test Jigs >

. Personal computer
(Windows P/C, OS:windows 95/98)
. Adjustment software SINGO98.exe
. RGB cable
. Panel holder service kit(Refer to page 1-8)
. Extension cable kit

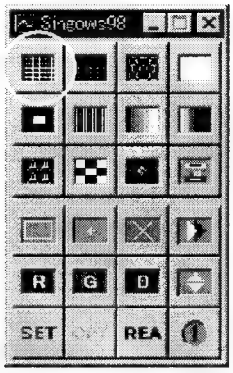
(1) Setting
Place projector on a horizontal surface and project onto a vertical screen.
(2) Remove top cover.
Refer to item 3-2.
(3) Remove Main PC board.
Refer to item 3-3.

(4) Connect LCD panels by using flat extension cables.
. Connect PJ851 and R-Panel with extension cable.
. Connect PJ901 and G-Panel with extension cable.
. Connect PJ951 and B-Panel with extension cable.

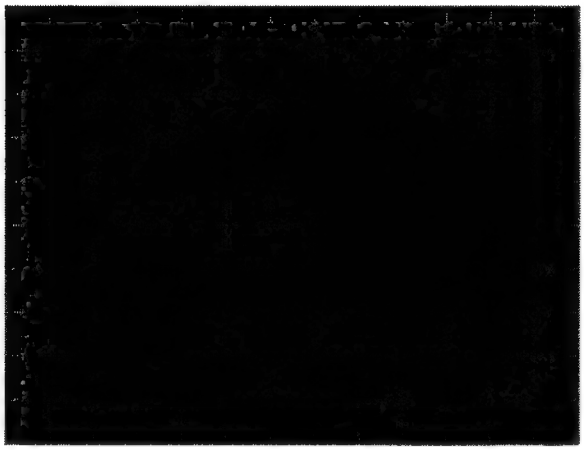


(5) Connect Main PC board using the extension cable kit. Be careful not to let the PC board touch the cabinet.
PJ006: To Safty interlook switch (4P)
PJ605: To Speaker (2P)
PJ355: To Intake fan (3P)
PJ001: To Sensor (4P)*
* Extension cable with relay PC board.

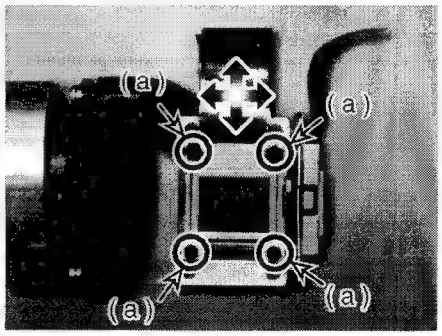
(6) Test Pattern Setup
Connect a computer with RGB cable, and start the Pattern generating software (SINGO98.exe).



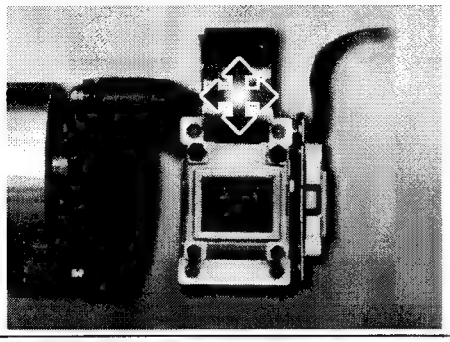
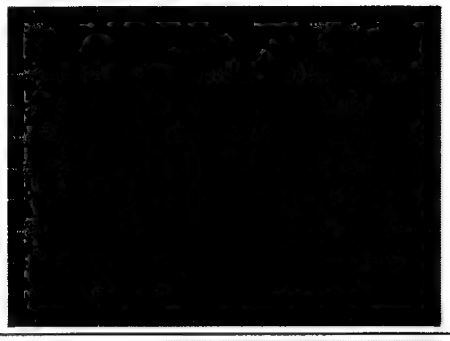
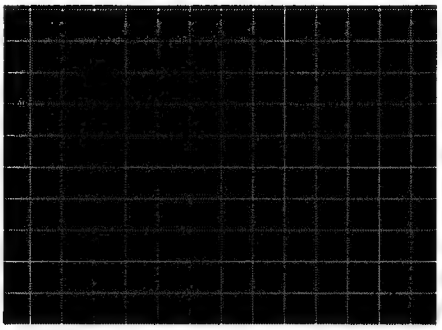
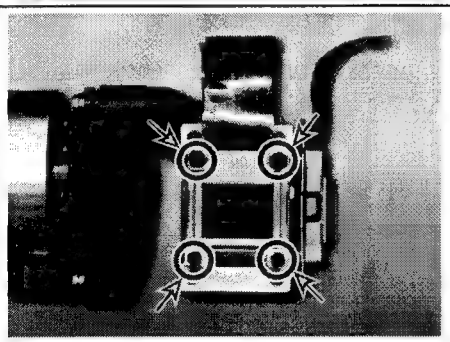
. Click cross hatch button.
. Click [R] and [B] buttons to display G-Cross Hatch, and check the lens focus is achieved.



(7) Convergence Adjustment
Loosen screws (a), and move the panel to back and front, right and left, and adjust the convergence using the service kit.



4-2. Adjustment of Convergence (ex. Red panel exchange)

Step	Figure	Explanation
1		TEST PATTERN: Green and Red Cross Hatches (when performing [R] adjustment) Move the panel to back and front, right and left, and adjust the convergence using the service kit. Movie
2	 	
3		Tighten 4 screws using the wrench in the service kit.

SECTION 2
SERVICING DIAGRAMS

1. TROUBLESHOOTING

SYMPTOM	CHECK	INSPECT	RESULT
Power is not on	Flat cable of Power supply (disconnect PJ1)	Standby voltage (See page 2-2)	(NG) → Power supply is NG. (OK) → Check next step.
	PJ1(connect PJ1)	Standby voltage	(NG) → Main PCB is NG, or any cable connection is NG.
Power off during use	LED Display	Lighting pattern	See 2-2
Lamp is not on	Lamp	Any damage inside or not	(Damaged) → Change with new lamp. (Not Damaged) → Check Lamp cover or lamp power supply. There is a possibility that the lamp may not show visible damage, but may be still be defective. Test with known good lamp.
No image	"No Signal" OSD message	Indicated or not	(Indicated) → RGB/Video terminal is NG, or Main PCB is NG. (Not Indicated) → Check next step.
	Measurring terminals TP-R TP-G TP-B	Waveform	(Correct) → LCD panel is NG, or PJ851/PJ901/PJ951 is NG. (Incorrect) → Main PCB is NG.

ATTENTION

LED displays various error pattern. (See 2-2)
Be careful because the same error occurs in the bad contact of the cable as well.
LED error combination display always show the latest error.

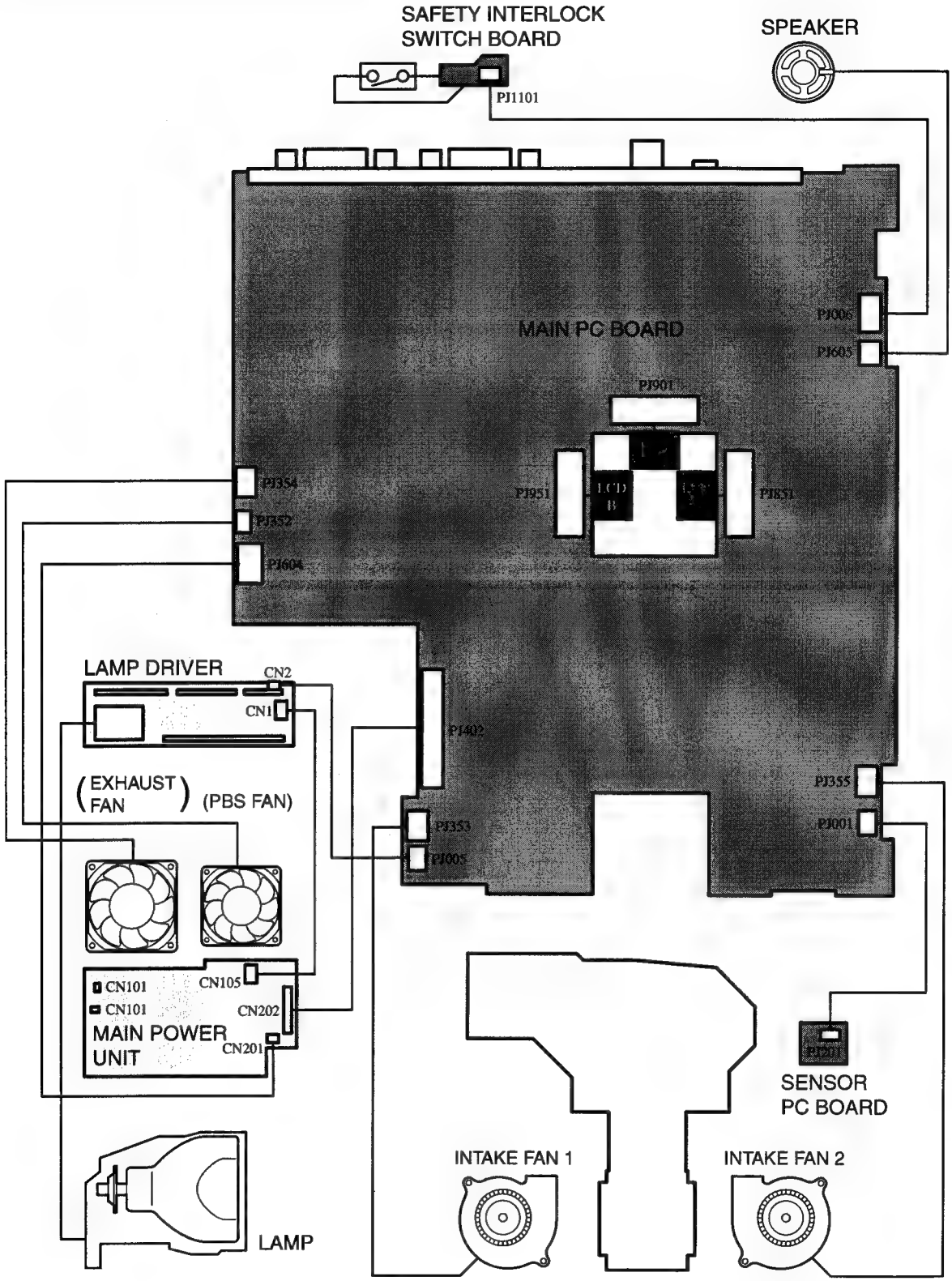
2. LED DISPLAY (Problems Shown on LED Indicator Combination)

Error Cord No.	Status of Indicator Light				Cause and Trouble	Solution
	FAN	TEMP	LAMP	ON		
00	(OFF)	(OFF)	(OFF)	(OFF)	Standby-power is not on > There's a problem with the power unit or system microcomputer.	Check the power unit. Check the connector. Check the main PC board.
01	(OFF)	(OFF)	(RED)	(RED)	The lamp went out during use or the lamp will not switch on > The bulb has reached the end of it's life.	Change new lamp. There may also be trouble in ballast power supply.
02	(GREEN)	(OFF)	(RED flashing)	(RED)		
03	(OFF)	(OFF)	(Orange flashing)	(RED)	The power turns off > Trouble with the Lamp cover	The lamp cover is not properly attached. Unplug the power cord and reattach the lamp cover.
04	(GREEN)	(Orange)	(OFF)	(RED)	The power turns off or does not come on > The inside is too hot, or the projector has been working in an area of high temperature. Error Cord 04: Near the Lamp housing 05: Near the Intake fan	Place the projector correctly so the intake and exhaust fan's holes are not covered. Turn the projector off, and leave it for a while, and turn it on again. Clean the air filter.
05	(GREEN)	(RED)	(OFF)	(RED)		
06	(Orange)	(OFF)	(OFF)	(RED)	The power turns off or does not come on > Trouble with the cooling fans. Error Cord 06: Fan (PJ352) PBS 07: Fan (PJ353) Intake 1 (B) 08: Fan (PJ354) Exhaust 11: Fan (PJ355) Intake 2 (RG)	Check the each cooling fan.
07	(RED)	(OFF)	(OFF)	(RED)		
08	(Orange flashing)	(OFF)	(OFF)	(RED)		
09	(RED flashing)	(OFF)	(OFF)	(RED)		
10	(RED)	(RED)	(OFF)	(RED)	The power turn off or does not come on > There's a problem with the sensor PC board or main PC board.	Check the sensor PC board. Check the main PC board. Check the connector (PJ001, PJ201)

NOTE

In each mode shown with this color, the projector returns to the standby mode after error indication for about 2 minutes.

3. WIRING BLOCK DIAGRAM



4. CONNECTOR PIN ASSIGNMENT

PJ001 (MAIN) ◀▶ PJ201 (SENSOR)

1	MCU-3V12C-SCL	0-3.3Vp-p
2	MCU-3V12C-SDA	0-3.3Vp-p
3	SHS+3.3V	+3.3V
4	AGND	0.0V

PJ005 (MAIN) ◀▶ CN2 (LAMP DRIVER)

1	- (LAMP ON)	+2.7V
2	DGND	0.0V
3	BRA-MCU-LMPERR	+0.2V
4	- (LAMP PWR SEL)	0.0V

PJ604 (VIDEO/AUDIO) ◀▶ CN201 (MAIN POWER UNIT)

1	15.5V	15.5V
2	AGND	GND
3	AGND	GND

PJ006 (MAIN) ◀▶ PJ1101 (SAFETY SW)

1	DOOR-FAN3-+13.5V	+13 ~ +6
2	FAN3-DOOR-+13.5V	+13 ~ +6
3	AGND	0.0V
4	INP-MCU-COVER	0.2V

PJ605 (VIDEO/AUDIO) ◀▶ SPEAKER

1	AUD-SPN	Non-Signal (DC: 4.4V)
2	AUD-SPP	Non-Signal (DC: 4.4V)

PJ355 (MAIN) ◀▶ INTAKE FAN 2

1	FAN POWER	+13 ~ +6
2	GND	0V
3	FAN PULSE	3.3Vp-p Pulse

PJ352 (MAIN) ◀▶ PBS

1	FAN POWER	+13 ~ +6
2	GND	0V
3	FAN PULSE	3.3Vp-p Pulse

PJ353 (MAIN) ◀▶ INTAKE FAN1

1	FAN POWER	+13 ~ +6
2	GND	0V
3	FAN PULSE	3.3Vp-p Pulse

PJ354 (MAIN) ◀▶ EXHAUST FAN

1	FAN POWER	+13 ~ +6
2	GND	0V
3	FAN PULSE	3.3Vp-p Pulse
4	NC	0V

PJ851, PJ901, PJ951 (DRIVE) ◀▶ LCD PANEL

(T50)

DREAM2 XGA PANEL

1	VSSY	DGND
2	DIRY	15.5V (0V)
3	DY	PULSE (15.5V)
4	LCCOM	5.8V
5	NRS	2.0-7.0V
6	VIDEO12	SIGNAL (7V ± 5V)
7	VIDEO11	SIGNAL (7V ± 5V)
8	VIDEO10	SIGNAL (7V ± 5V)
9	VIDEO9	SIGNAL (7V ± 5V)
10	VIDEO8	SIGNAL (7V ± 5V)
11	VIDEO7	SIGNAL (7V ± 5V)
12	VIDEO6	SIGNAL (7V ± 5V)
13	VIDEO5	SIGNAL (7V ± 5V)
14	VIDEO4	SIGNAL (7V ± 5V)
15	VIDEO3	SIGNAL (7V ± 5V)
16	VIDEO2	SIGNAL (7V ± 5V)
17	VIDEO1	SIGNAL (7V ± 5V)
18	VSSX	D GND
19	DIRX	15.5V (0V)
20	ENB1	PULSE (15.5V)
21	ENB2	PULSE (15.5V)
22	DX	PULSE (15.5V)
23	CLX	PULSE (15.5V)
24	NCLX	PULSE (15.5V)
25	VDDX	15.5V
26	VDDY	15.5V
27	NRG	PULSE (15.5V)
28	CLY	PULSE (15.5V)
29	NCLY	PULSE (15.5V)
30	DY	PULSE (15.5V)

(S30)

DREAM2 SVGA PANEL

1	DY	PULSE (15.5V)
2	VSSY	DGND
3	VSSY	DGND
4	NRS2	2.0-7.0V
5	NRS1	2.0-7.0V
6	LCCOM	5.8V
7	VSSX	DGND
8	VIDEO6	SIGNAL (7V ± 5V)
9	VIDEO5	SIGNAL (7V ± 5V)
10	VIDEO4	SIGNAL (7V ± 5V)
11	VIDEO3	SIGNAL (7V ± 5V)
12	VIDEO2	SIGNAL (7V ± 5V)
13	VIDEO1	SIGNAL (7V ± 5V)
14	VSSX	D GND
15	N.C	0V
16	N.C	0V
17	VDDX	15.5V
18	DX	PULSE (15.5V)
19	NCLX	PULSE (15.5V)
20	CLX	PULSE (15.5V)
21	DIRX	15.5V (0V)
22	ENB2	PULSE (15.5V)
23	ENB1	PULSE (15.5V)
24	LCCOM	5.8V
25	DIRY	15.5V (0V)
26	NRG	PULSE (15.5V)
27	VDDY	15.5V
28	NCLY	PULSE (15.5V)
29	CLY	PULSE (15.5V)
30	DY	PULSE (15.5V)

PJ402 (MAIN) ←→ CN202 (POWER UNIT (APS-M423))

1	+3.3V	
2	+3.3V	
3	+3.3V	
4	AGND	
5	AGND	
6	AGND	
7	+6.5V	
8	AGND	
9	NC	
10	-10.5V	
11	AGND	
12	NC	
13	+15.5V	
14	+15.5V	
15	AGND	
16	AGND	
17	NC	
18	+15.5V	
19	AGND	
20	NC	
21	S+5V	
22	AGND	
23	MCU-POW-PWRON	
24	AGND	

CN105 (MAIN POWER UNIT) ←→ CN1 (LAMP DRIVER)

1	+370V	LIVE
2	NC	
3	GND	LIVE

SECTION 3
PARTS LIST

SAFETY PRECAUTION

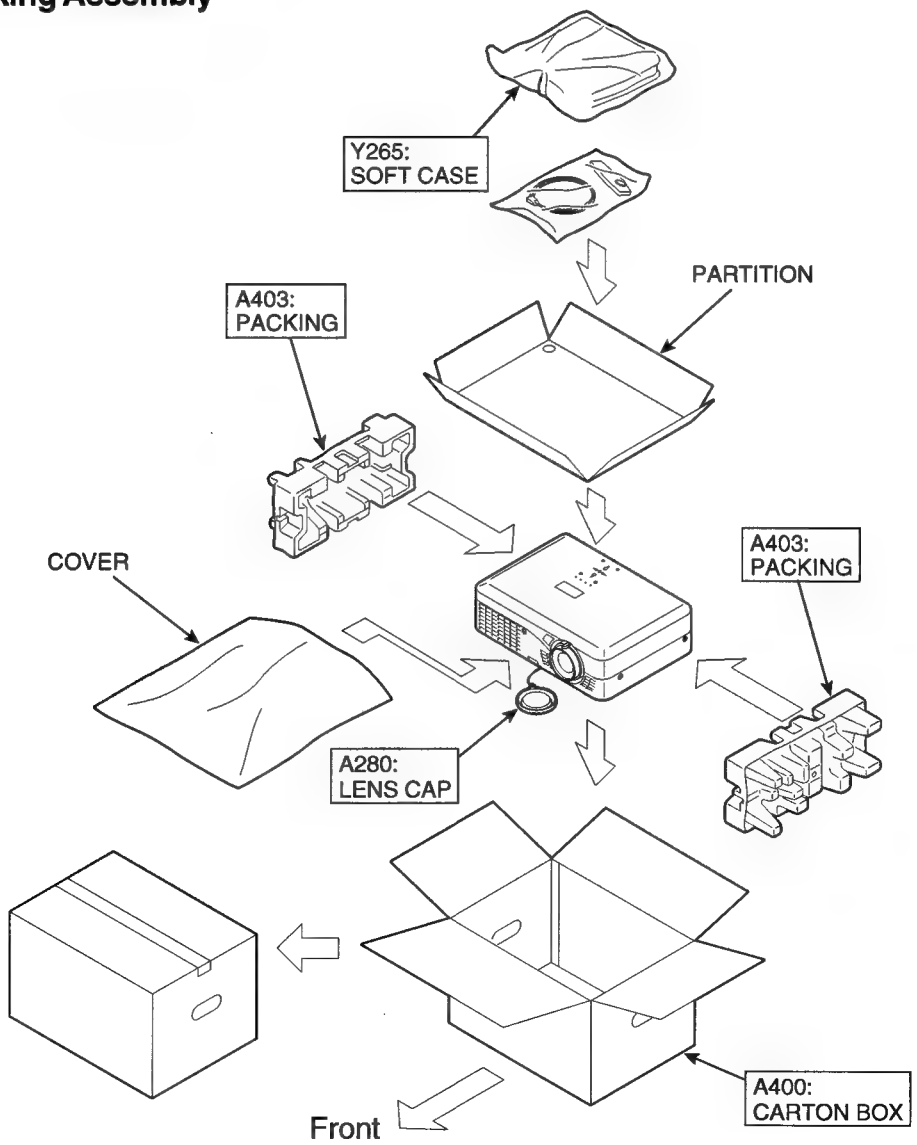
Replace only with part number specified. The mounting position of replacement is to be identical with originals. The substitute replacement parts which do not have the same safety characteristics as specified in the parts list may cause shock, fire or other hazards.

NOTICE

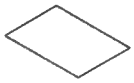
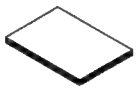
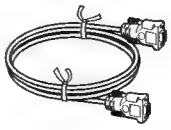
The part number must be used when ordering parts in order to assist in processing, be sure to include the model number and description.

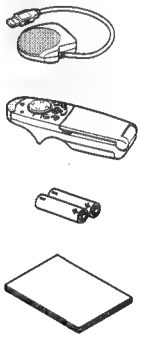
1. EXPLODED VIEWS

1-1. Packing Assembly

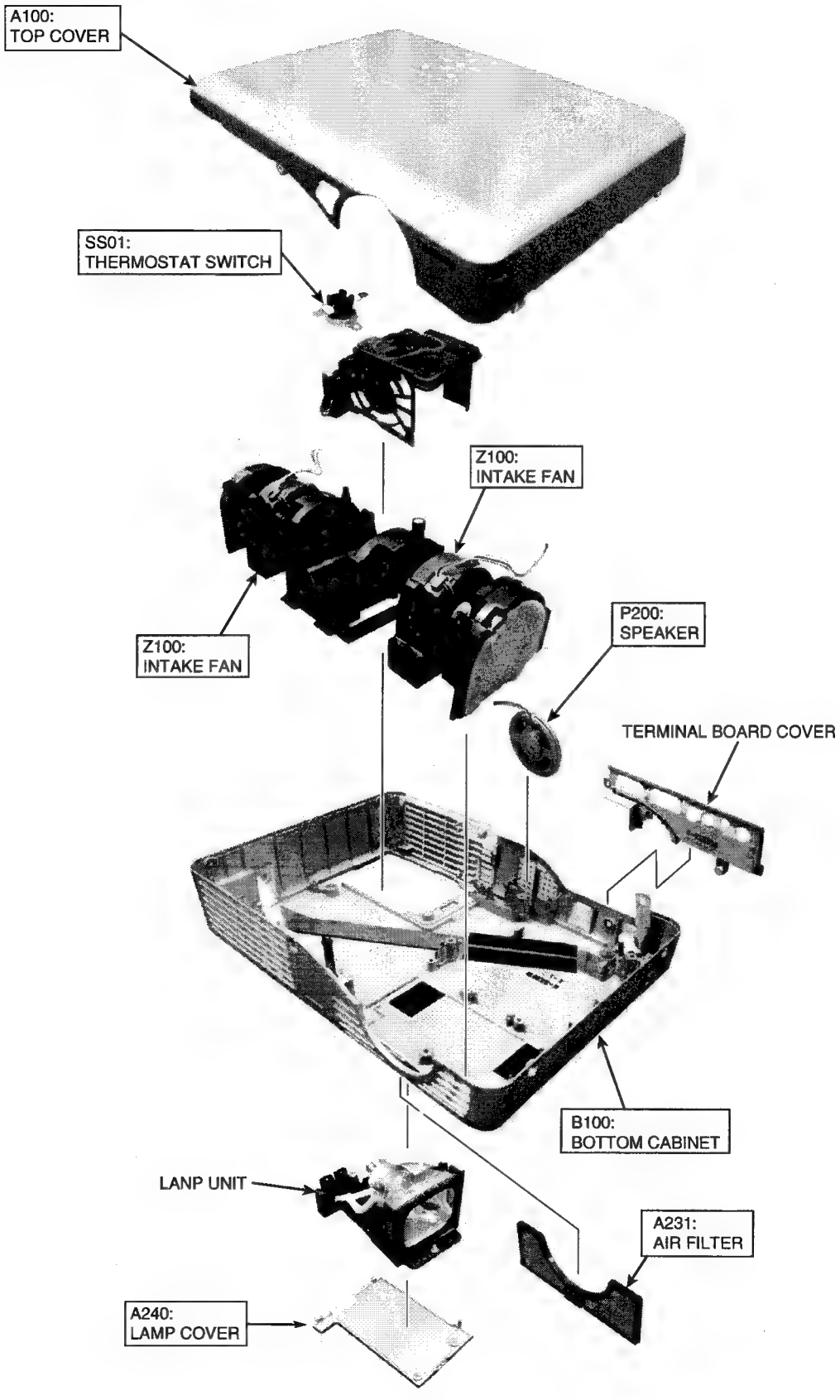


1-2. Accessories

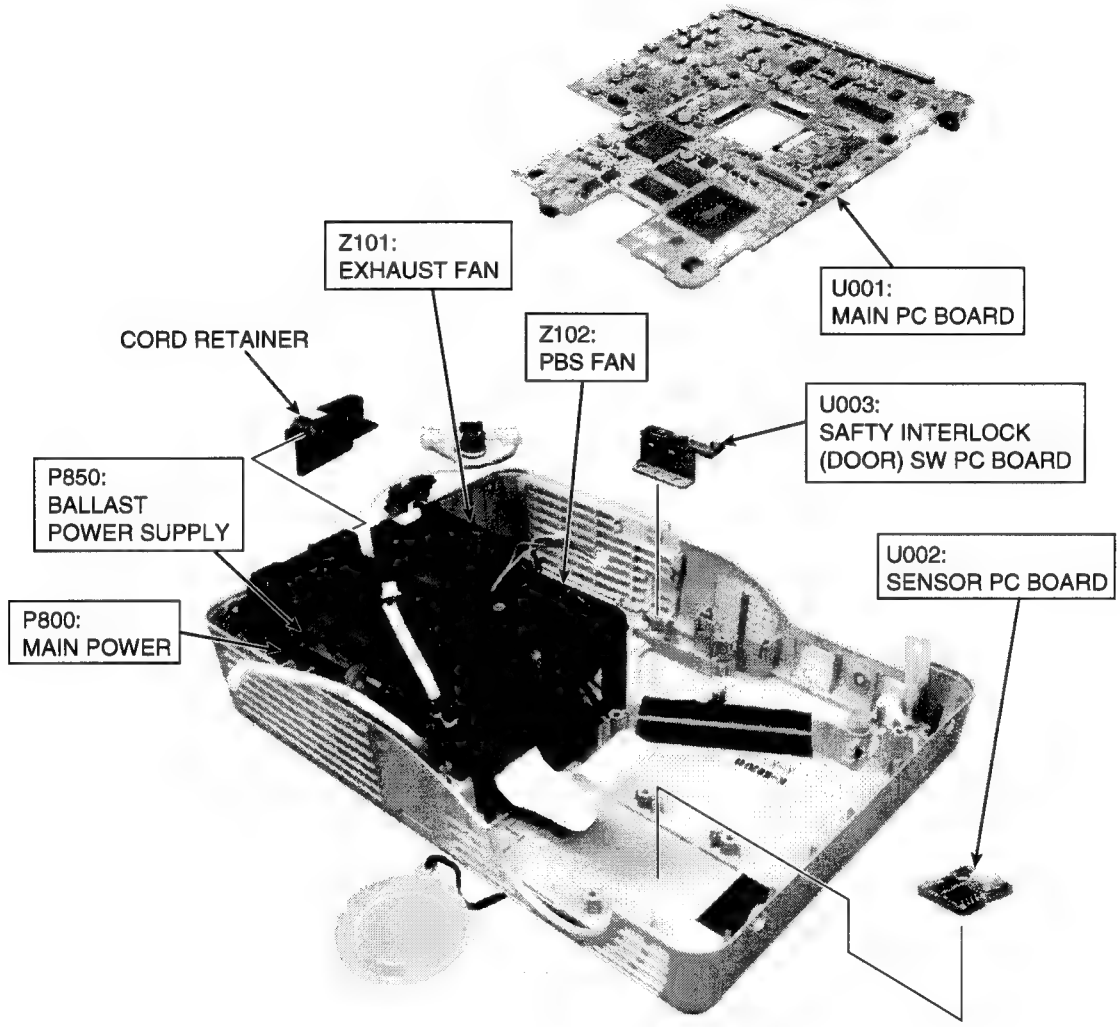
PARTS NO.	DESCRIPTION	FORM
Y210	Remote Control Unit	
	Battery	
Y221 | Y229 Y231 Y232	Quick Sheet	
Y200	CD - ROM	
Y201/Y203	Owner's Manual	
Y256/Y260	Power Cord	
	RGB Cable	

PARTS NO.	DESCRIPTION	FORM
Y240	AV Cable	
Y105	Audio Cable for Computer	
	Audio Cable	
Y265	Carrying Bag	
	Mouse Remote Control Set	

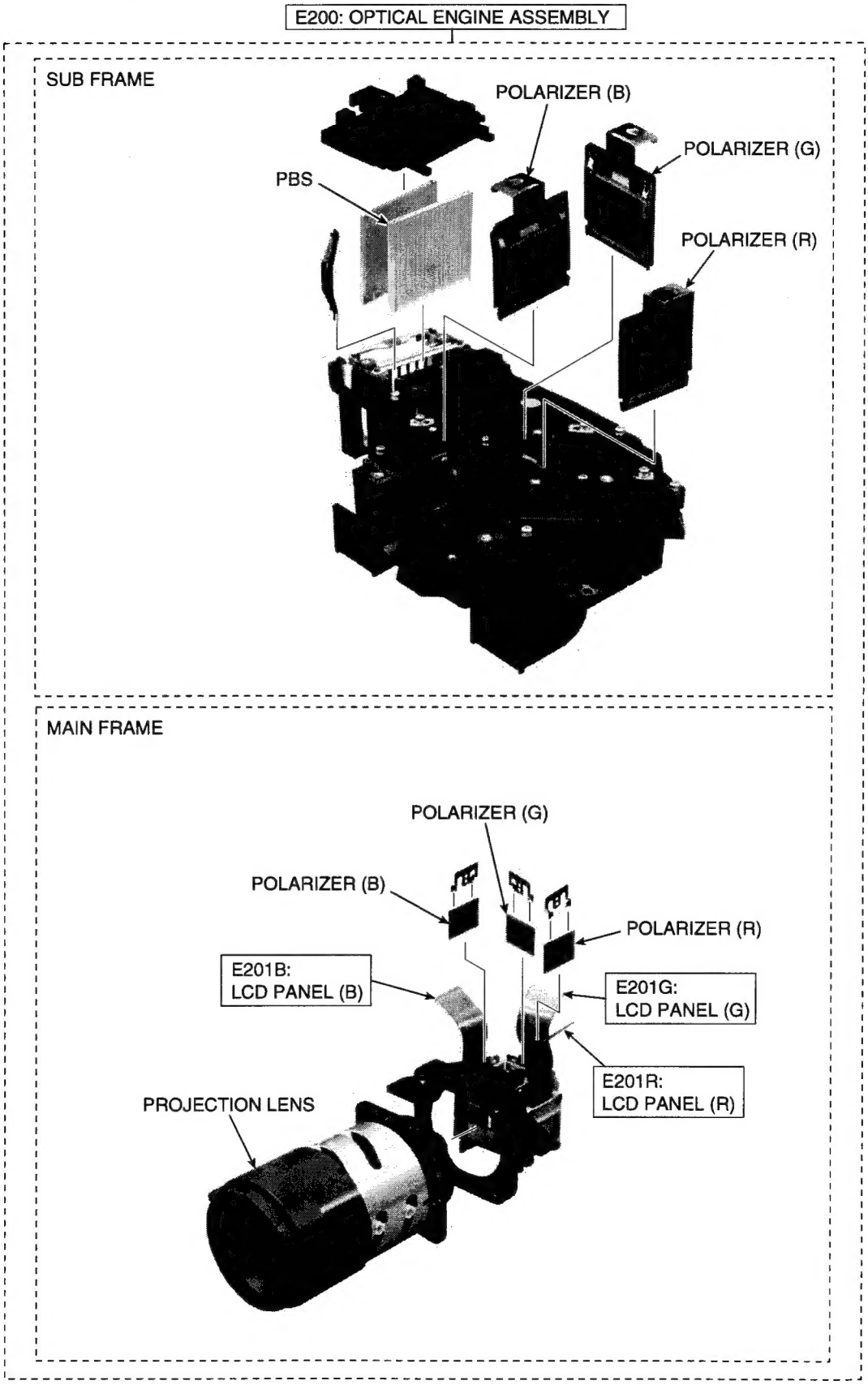
1-3. Chassis Assembly



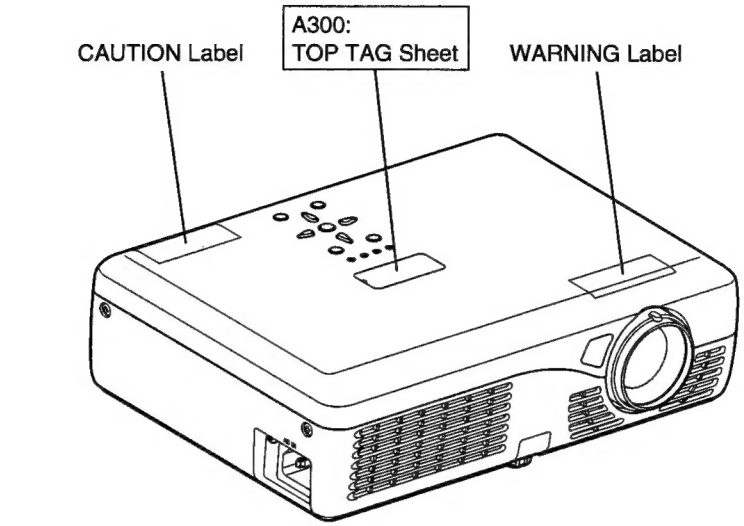
1-4. PC Board and Power Unit Assembly

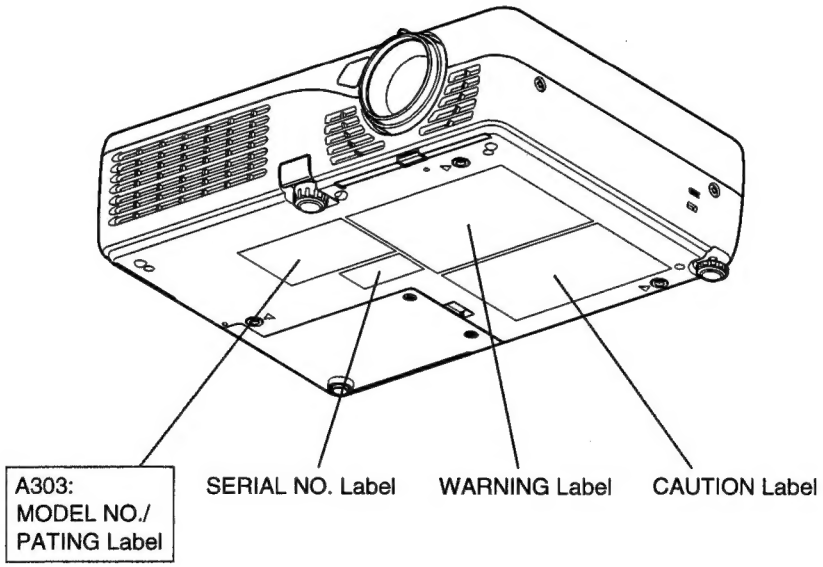


1-5. Optical Engine Assembly



1-6. Label


CAUTION Label
A300:
TOP TAG Sheet
WARNING Label


A303:
MODEL NO./
PATING Label
SERIAL NO. Label
WARNING Label
CAUTION Label

2. PARTS LIST

Location No.	Part No.	Description	Model
A100	23530666	ASSY, TOP COVER	ALL
A231	23528248	SHEET, AIR FILTER	ALL
A240	23530671	COVER, ASSY LAMP	ALL
A280	23890986	LENS CAP	ALL
A300	23541111	SHEET, TOP TAG	TLP-T50
A300	23541112	SHEET, TOP TAG	TLP-S30
A300	23541119	SHEET, TOP TAG	TLP-T50M
A303	23555255	LABEL RATING	TLP-T50
A303	23555256	LABEL RATING	TLP-S30
A303	23555328	LABEL RATING	TLP-T50M
A350	23555257	LABEL, CARTON BOX	TLP-T50
A350	23555258	LABEL, CARTON BOX	TLP-S30
A350	23555329	LABEL, CARTON BOX	TLP-T50M
A400	23067015	CARTON, BOX	ALL
A403	23946452	PACKING	ALL
B100	23411805	CABINET, ASSY BTM	ALL
B110	23436801	FOOT, ADJUSTER ASS	ALL
B117	23436802	FOOT, REA	ALL
E200	23405205	OPTICAL ENGINE, CJ520TA	TLP-T50
E200	23405206	OPTICAL ENGINE, CJ522TA	TLP-S30
E201B	23301490	DISPLAY, L3P07X-46G00B	TLP-T50
E201B	23301496	DISPLAY, L3P07X-42G00B	TLP-S30
E201G	23301489	DISPLAY, L3P07X-46G00G	TLP-T50
E201G	23301495	DISPLAY, L3P07X-42G00G	TLP-S30
E201R	23301488	DISPLAY, L3P07X-46G00R	TLP-T50
E201R	23301494	DISPLAY, L3P07X-42G00R	TLP-S30
P200	23351204	SPEAKER,	ALL
P800	23122422	POWER UNIT, APS-M423	ALL
P850	23122423	POWER UNIT, HVP1653DC-80	ALL
SS01	23344476	SWITCH, THERMOSTAT	ALL
U001	23920014	PC BOARD MAIN UNIT	T-50. T-50M
U001	23920017	PC BOARD MAIN UNIT	S-30
U002	23920015	PC BOARD SENSOR UNIT	T-50. T-50M
U002	23920018	PC BOARD SENSOR UNIT	S-30
U003	23920016	PC BOARD DOOR SW UNIT	T-50. T-50M
U003	23920019	PC BOARD DOOR SW UNIT	S-30
Y105	23368798	CABLE, ST-MINI 3M	ALL
Y200	23565852	CD-ROM OWNER'S MANUAL	ALL
Y201	23565853	OWNER'S MANUAL, E□G□SP□F	US, EU, UK
Y203	23565855	OWNER'S MANUAL, BEI	CH
Y210	23306483	REMOCON HAND UNIT CT-90140	ALL
Y221	23589451	SHEET, □UICK ENG	EU, UK, US
Y222	23589452	SHEET, □UICK FRE	EU, US
Y223	23589453	SHEET, □UICK SPA	EU, US
Y224	23589455	SHEET, □UICK GER	EU
Y225	23589456	SHEET, □UICK ITA	EU
Y226	23589457	SHEET, □UICK POR	EU
Y227	23589458	SHEET, □UICK SWE	EU
Y228	23589459	SHEET, □UICK ROS	EU
Y229	23589460	SHEET, □UICK KOR	EU
Y231	23589461	SHEET, □UICK BEI	CH
Y232	23589462	SHEET, □UICK KUA	CH
Y240	23368799	CABLE, A□V PINX3 3M	ALL
Y256	23372155	POWER CORD, CH	CH
Y256	23372149	POWER CORD, UK	EU, UK
Y260	23372148	POWER CORD, US	US
Y260	23372167	POWER CORD, EU	EU
Y265	23542008	BAG, SOFT CASE	ALL
□100	23125907	FAN, T60H1250A	ALL

Location No.	Part No.	Description	Model
Z101	23125905	FAN, D07A-12PH 01A	ALL
Z102	23125906	FAN, 06KL-04W-B49	ALL
——	23405207	LENS, 520LENS	ALL
——	23405208	OPTICAL PARTS(MECHA), 520MAIN	TLP-T50
——	23405209	OPTICAL PARTS(MECHA), 520MAIN	TLP-S30
——	23405210	OPTICAL PARTS(MECHA), 520SUB	ALL
——	23405211	POLARIZAR, I-R(520)	ALL
——	23405212	POLARIZAR, I-G(520)	ALL
——	23405213	POLARIZAR, I-B(520)	ALL
——	23405214	POLARIZAR, O-R(520)	ALL
——	23405215	POLARIZAR, O-G(520)	ALL
——	23405216	POLARIZAR, O-B(520)	ALL
——	23405217	PBS, 520PBS	ALL
——	23405218	P-HOLDER SERVICE-KIT	ALL